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A LOW CALORIE KETOGENIC DIET FOR THE TREATMENT OF CHRONIC URINARY TRACT INFECTIONS*

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The innumerable therapeutic agents that have been recommended for the treatment of urinary tract infections are eloquent proof of their inadequacies. Since Helmholz[3] discovered that ketone bodies in the urine inhibit the growth of certain micro-organisms, a new chapter in the treatment of urinary tract infections has been written. Helmholz[3] and Clark[1] in 1931, demonstrated the value of the ketogenic diet in the treatment of bacillary infections of the urinary tract. Helmholz[4] has shown that the efficacy of this regime is dependent upon two factors: (1) that ketone bodies be present in the urine in a sufficient concentration, and (2) that a pH of 5.5 or less must obtain. A. T. Fuller,[2] an English biochemist, has shown that the mode of action of the diet is due to the bacteriostatic effect of the levo-rotatory beta-hydroxybutyric acid. He also pointed out that the activity of this substance increases in proportion to the acidity of the urine.

Reported series of cases show that 60 to 75 per cent of chronic bacillurias are cleared up on this form of treatment. Our experiences with the ketogenic diet have substantiated these observations. The majority of our cases had, moreover, failed to respond to other forms of therapy.

The standard ketogenic diets consist of a large amount of fat, an adequate amount of protein, and a minimal amount of carbohydrate. Ketosis develops because the available glucose is inadequate to completely oxidize the fats.

Fifty patients were treated by the administration of the standard high fat ketogenic diet in the University Hospital. Excellent results were observed in this series of patients, but the high fat content of the diet produced gastric upsets in the majority, a few being unable to tolerate it at all. Modifications of the diet were therefore made in an effort to remove this objectionable feature.

It has long been recognized as a fundamental principle of metabolism that the organism is not dependent upon exogenous fat for its metabolic mixture, calling upon its endogenous supply whenever the energy of the diet is below the expenditure of energy.[6] This being true, the production of ketosis is solely dependent upon an in-

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adequacy of available glucose. This must be supplied from exogenous sources. In starvation, where the caloric requirements of metabolism are almost entirely dependent upon the utilization of endogenous fat, one sees the most rapid and profound degree of ketosis.

A diet containing two-thirds of a gram of protein (normal adult requirement) and one-third of a gram of carbohydrate per kilogram has been used as the basis for a diet in the treatment of some 80 patients at the University Hospital. Only a sufficient amount of fat to make the diet palatable is utilized. This diet is necessarily far below the energy requirement. It was palatable to every patient, no gastric upsets occurred, and ketosis developed as promptly as it did in those patients on a high fat regime. Estimations of the metabolic mixture in all of the cases in this series have shown the fatty-acid glucose ratio to be between four to one and five to one, regardless of the amount of fat ingested. The question regarding weight loss resulting from this low calorie diet naturally arises. This seems unimportant inasmuch as practically all patients requiring treatment are of approximately normal weight or over. However, very little weight loss actually does occur during the short period of treatment and is of little consequence to the patient of normal weight and advantageous to the obese. The emaciated patient is not considered a suitable subject for any form of ketogenic therapy.

A large proportion of our cases are treated as in-patients and the diets for this group are individually calculated and prepared by the Department of Dietetics. These diets and the method of calculation are being presented in detail in another publication. A simple diet, low in calories and available glucose, has been devised for our out-patients and is applicable to office practice. It is a standard diet and is ketogenic for patients weighing 115 pounds and over. Children's diets must be calculated on the basis of the caloric requirement of the individual.

A Low Calorie Ketogenic Diet

Caloric requirements (1800-3500 calories)
Ratio FA/G = 4:1 or greater
Protein—40 gms., carbohydrate—15 gms., fat—39 gms. (?)
Calories—570, available glucose—37 gms.

Menu Plan

Breakfast

Egg—1
Bacon—2 long strips
Cream or milk—1 tablespoon
5% vegetable—½ cup cooked
*Bran wafers as desired
Butter as desired
Tea or coffee

Luncheon

2 eggs or 2 ounces of meat or fish or 3 tablespoons of cottage cheese
5% vegetable—⅓ cup cooked or ½ cup raw
5% fruit
Cream or milk—1 tablespoon
*Bran wafers as desired
Butter or mayonnaise as desired
Tea or coffee

Dinner (the same as Luncheon)

Sample Menus for Day

Breakfast

1 egg fried with 2 strips of bacon
½ cup of tomato juice
Bran wafer with butter
Coffee with 1 tablespoon of cream

Luncheon

Cottage cheese—3 tablespoons
1/5 head of lettuce with 2 tablespoons of mayonnaise
Bran wafers with butter
Coffee or tea with 1 tablespoon of cream

Dinner

Steak—2 ounces
Cooked spinach—¼ cup with butter
Raw celery—2 stalks
Bran wafer with butter
Coffee or tea with 1 tablespoon of cream

No sugar allowed. Chewing gum, chewing tobacco, toothpaste, sweetened cathartics, etc., are not allowed. Saccharine may be used for sweetening. Fruits must be fresh or canned without sugar. Mayonnaise should be made without sugar.

Classification of Fruits and Vegetables According to Carbohydrate Content†

5% Vegetables

Asparagus
Bean sprouts
Broccoli
Cabbage
Cauliflower
Celery
Chard
Chinese cabbage
Cucumber
Egg plant
Endive
Greens, beet
Greens, mustard
Kohlrabi
Lettuce
Okra
Peppers

*Bran wafers must have no available carbohydrate.
Cellu-wafers, Chicago Dietetics Supply House, 152 N. Wabash, Chicago.

†We are indebted to Miss Frances MacKinnon, A.B., of the Department of Dietetics, for her aid in preparing the above diet tables and classification of fruits and vegetables.

Pumpkin
Radish
Spinach
String beans
Summer squash
Tomatoes
Turnips
Watercress

10% Vegetables

Beets
Brussels sprouts
Carrots
Dandelion greens
Leeks
Olives, green
Onions
Rutabagas
Winter squash

10% Fruits

Blackberries
Cranberries
Currants
Gooseberries
Grapefruit
Lime juice
Oranges
Orange juice
Peaches
Tangerines

1 cup *5% Veg.* = ½ cup 10% Veg.

5% Fruits

Honey dew melon
Lemon juice
Muskmelon
Rhubarb
Strawberries
Watermelon

The degree of urinary acidity necessary for satisfactory results is usually not produced by the ketogenic diet alone. Ammonium chloride is therefore administered during the course of the diet to increase the acidity. Two grams three times a day in enteric coated tablets generally suffices.

Herrold[5] has shown that chlor-phenol red is the indicator of choice for the estimation of the approximate acidity of the urine. One drop of the indicator is added to 20 drops of the freshly voided urine. If the color of the urine does not change, the pH is approximately 5.4 or less, which is the desired degree of acidity. If the urine is pink or red following the addition of the indicator, the acidity is above pH 5.4 and therefore insufficiently acid. The urea splitting organisms in these urines are capable of increasing the pH in short periods of time on standing.

A simple test for ketone bodies in the urine is the ferric chloride test for diacetic acid. To 10 c.c. of urine, add an equal volume of a 10 per cent aqueous solution of ferric chloride. The presence of diacetic acid is indicated by a Bordeaux-red color. It should be remembered that salicylates will give a false positive reaction.

Estimations of pH and the ferric chloride tests for ketonuria are carried out daily. Examination of stained sediment is done every third day to determine the regression of the infection. When negative sediment is obtained, a culture is made which, if negative, is an indication for the discontinuance of the diet. Most patients show a clear urine at the end of 10 to 14 days. If bacilluria persists beyond this period, it is felt that a mixed diet should be resumed and the patient advised to return to the ketogenic diet after a rest period of two to four weeks. Occasionally, several periods of treatment on the regime may be necessary.

Unsatisfactory results may obtain for several reasons, many of which are preventable.

There is a certain group of cases that are not benefited by this regime.

Failure to develop ketonuria may result from inadequate exercise.

Adequate ketonuria with inadequate acidity inevitably results in failure.

Failure to develop ketonuria may be traceable to additional sources of exogenous glucose.

Ketonuria may not develop in some patients having poor renal function.

Conclusions

The ketogenic diet is a valuable adjunct in the treatment of urinary tract infections.

The conventional ketogenic diet because of its high fat content is intolerable to many patients.

A low fat, low calorie diet which eliminates this objectionable feature is proposed.

Ketonuria and a low pH (5.5 or less) must co-exist for successful results.

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DIABETES INSIPIDUS AFTER EPIDEMIC ENCEPHALITIS

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There is ample evidence in the literature to establish the fact that the syndrome of diabetes insipidus can be produced by a localized pathological process in the region of the infundibulum, tuber cinereum, and hypothalamus. The discovery of Bailey and Bremer[1] in their experimental work on dogs that thirst may precede the polyuria shifted the emphasis from the polyuria to the polydipsia. A short time later Curtis[2] produced further evidence to support the view that in experimental diabetes insipidus thirst is the primary factor. Recently Alajouanine et al[3] reported a case in which the patient was seized with an unquenchable thirst while undergoing an operation for removal of a pituitary adenoma under local anesthesia, and the polyuria did not appear until a day or two later. It is therefore logical to believe that polyuria and polydipsia as a complication of other lesions in this region, such as fractures, basilar syphilis, interpeduncular tumors, hydrocephalus internus, as well as epidemic encephalitis, can be explained by the same mechanism.

Because the polyuria is entirely a secondary phenomenon, the term "pseudo-diabetes insipidus" has been applied to this syndrome. It should be distinguished from genuine diabetes insipidus, which is characterized by a compulsory polyuria with urine of very low specific gravity, low concentration capacity of the kidneys, and, on account of the polyuria, a secondary polydipsia. Pseudo-diabetes insipidus resulting from a disturbance of the thirst regulating center has been frequently observed after trauma, but after epidemic encephalitis it is relatively uncommon. Wohlfart[4] in his review of the subject could find only three certain cases in the literature, and added one of his own. In all of these the encephalitis occurred between the ages of twelve and eighteen, and the polydipsia and polyuria began from a few months to three years later. In our case the onset occurred directly after an acute illness in infancy, and the symptoms persisted unchanged for eighteen years.

Report of Case

The patient, twenty-two years old, male, entered the University Hospital on October 8, 1934, complaining of nervousness, shaking of the left hand, increased thirst, and urinary frequency.

History.—According to his mother, the patient had a scalp infection at the age of three, followed by an illness which was characterized by somnolence and high fever. Several months later it was observed that he drank large quantities of water, and this symptom persisted through childhood. From the time the patient was a boy his intake remained fairly constant at 5 gallons a day, and the output between 4 and 4.5 gallons. At the age of seventeen he began to be nervous, irritable, impulsive, and stated that when excited he would feel dizzy and dazed. He developed intermittent headaches localized to the forehead and just behind the eyes. During the daytime he would have uncontrollable impulses to sleep, and at about the same time he developed spells during which his left eyeball rolled up and jerked. The rhythmic tremor of the left hand was also first noticed about four years before admission. There was progressive general weakness and ease of fatigue, which finally made it impossible for the patient to continue his work.

Family history was negative except that the father was alcoholic.

Examination.—The patient was an overly developed, obese, dysplastic young adult, weighing 225 pounds. The fat tissue was evenly distributed. His features were coarse and there was definite masking of the facial expression. There was a typical parkinsonian tremor of the left hand, but not of any other extremities. The skin was seborrheic and there was a tendency to increased sweating. Body hair and genitalia were normal. The fingers and toes were short, thick, and the subcutaneous tissue seemed puffy. Heart, lungs, and abdomen were negative. The blood pressure was 175/90. The cranial nerves were negative except that the left pupil was slightly larger than the right. Sensation and reflexes were normal. The ocular fundi and the visual fields were normal. The intelligence appeared to be fairly high, and there was no memory defect.

X-rays.—The routine skull examination was entirely negative and the sella was within normal limits of size. Encephalogram after replacement of 110 c.c. of spinal fluid with 100 c.c. of air revealed diminished subarachnoid markings over the left cortex, suggestive of arachnoid adhesions. Drainage was not complete, but there was no evident displacement of the ventricular system.

Laboratory Data.—The blood Kahn examination was negative. Urinalysis was negative and the specific gravity ranged between 1.003 and 1.006. Examination of the blood revealed 100 per cent hemo-

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Type of medication	Days	Average Intake	Urinary Output
General diet without medication	11	11,420	7,175
Pituitrin (surg.) 1 c.c. I.M. daily	12	13,860	6,100
Pituitrin (surg.) 1 c.c. I.M. q.d.	15	8,810	3,420
Pitressin jelly, 1 gm. t.i.d. (nasally)	4	11,390	6,110
Pitressin nasal spray, 2 c.c. (20 units) t.i.d.	9	7,105	4,250
Hyoscine hydrobromide gr. 1/100 t.i.d.	5	10,630	7,000
Hyoscine hydrobromide gr. 1/150 t.i.d. Stramonium folia gr. 2 t.i.d.	8	13,335	8,480
Hyoscine hydrobromide gr. 1/150 t.i.d. Stramonium folia gr. 2 t.i.d. Ephedrine sulphate gr. ⅜ t.i.d.	8	9,770	5,885
Stramonium folia gr. 2 t.i.d. Ephedrine sulphate gr. ⅜ t.i.d. Pitressin nasal spray, 2 c.c. t.i.d.	10	7,580	5,465

globin (Sahli), 5,710,000 red blood cells per cu. mm., 10,700 white blood cells per cu mm., and a normal differential count. The basal metabolic rate was plus three. The fasting blood sugar was 64 mg. per 100 c.c. A glucose tolerance test showed 126 mg. per 100 c.c. the first hour, 125 the second, and 99 the third, and a trace of sugar was found only in the third hourly urine examination. Lumbar puncture revealed a manometric pressure of 240 m.m. of water. The spinal fluid Kahn reaction was negative. There were two cells per cu. mm. The carbolic and ammonium sulphate tests were negative for globulin. The total protein was 35 mg. per 100 c.c. The spinal fluid sugar was 56 mg. per 100 c.c., which was 81 per cent of the simultaneously determined blood sugar. Urea clearance test gave 91 per cent on the first examination and 95 per cent on a second examination. Phenolsulphonephthalein test showed 35 per cent excretion during the first fifteen minutes and 47 per cent in thirty minutes. The wheal produced by 0.2 c.c. of physiological saline injected intradermally disappeared in twenty-five to thirty minutes (McClure-Aldrich absorption test).

Comment

It was observed that this patient demonstrated almost all of the symptoms of the so-called neuropituitary syndrome, namely, polydipsia, polyuria, obesity, elevated blood pressure, tendency to somnolence, headaches, and mild emotional and psychic disturbances. Only glycosuria, epilepsy, and disturbances of thermogenesis were lacking. The febrile illness which preceded the onset of the polydipsia in infancy was undoubtedly an attack of epidemic encephalitis. The subsequent development of parkinsonism and oculogyric crises fourteen years later leaves little doubt that in this case we are dealing with the sequelæ of lethargic encephalitis. Because of the close proximity of the globus pallidus and substantia nigra to the hypothalamus, it can be readily understood how an inflammatory process in the basal ganglia may by slight extension medially involve the region in which the diencephalic thirst center is located.

Various types of medication were tried in our case in an attempt to reduce both the parkinsonian tremor and the excessive desire for fluids. As shown in the accompanying table, the usual drugs for parkinsonism failed to have an appreciable effect on the intake and output. Hyoscine seemed to decrease the polydipsia slightly, but was not well tolerated. Stramonium appeared to have a better effect on the tremor, but caused an increase in the fluid intake. Ephedrine sulphate had a slightly lowering effect on the intake. Pitressin jelly had little effect, possibly because of the difficulty of administration. Pituitrin intramuscularly four times a day, and pitressin nasal spray every six hours, were definitely the two most valuable agents in reducing the polydipsia and polyuria. When the intake was kept between 6,000 and 8,000 c.c. daily the patient also felt generally more comfortable. The possibility of a psychogenic element was excluded by substituting sterile hypodermics at the time pituitrin was being given, and there was a prompt rise of the intake to the original level within a day.

It is generally believed that the prognosis of diabetes insipidus is especially bad if the the condition occurs in youth. The persistence of symptoms in our case for nineteen years would indicate that they are in all probability permanent. In this respect the diabetes insipidus bears the same general prognosis as other sequelæ of epidemic encephalitis. In view of the organic nature of the underlying cause, it is doubtful if any therapy for the abnormal thirst sensation can be more satisfactory than that for the parkinsonism. What beneficial effect is obtained seems to be due to intermediation of the pituitary. The exact physiological relationship between hypophysis

and hypothalamus, and the manner in which it is influenced by the administration of posterior lobe extracts, has not as yet been determined.

Summary

A case of secondary diabetes insipidus following epidemic encephalitis in infancy is presented, with evidence to support the view that the polydipsia in such cases is primary, caused by involvement of the hypothalamic thirst center.

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MAJOR AND MINOR MEDICAL MORALS

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In discussing briefly the subject of medical ethics with the students of this medical school I shall bear in mind the fact that before entering upon your medical studies you must, in your college courses, have become acquainted with ethics or the science that deals with conduct from the standpoint of its being right or wrong, must have learned to look upon moral problems as being truly real, and must have become convinced of the value of giving due thought to the solution of such problems. You were told how the terms "ethical" and "moral" referred originally to customs or usages that had gained approval and only later came to be applied to disposition and character. Some of you doubtless had courses in psychology that threw light upon the inner side of conduct, upon choice and purpose, as well as courses in biology and sociology that illuminated the outward side of conduct, its relations to nature and to human society. And in your studies of ethics you found how choice is influenced by the rights of others and how actions are accordingly judged as being either good or bad. In analyzing moral life you must have been impressed by the dominance of ideal as contrasted with merely material interests and by the evidences in social life of sincere regard for others; you became acquainted with the existence of moral standards and their origin, and with the development of a love of such standards as conscientious attitudes with conceptions of the right and of duty that emerged from instinctive activities through attention, through habit, and through the gradual organization of character by virtue of idealizing and socializing processes. I may, therefore, take it for granted that your knowledge of ethics in general is such that I may without further reference to the nature of morality or to the theory of the moral life devote the hour exclusively to certain applications of ethics that pertain especially to the lives of those who engage in the work of the medical profession.

At the outset, let me assure you that you need have no especial dread of unconscious breaches of the code of medical ethics; there is so much talk of it that many recent graduates are, I imagine, beset by the fear that they may, through ignorance, commit some offense that will bring them into disfavor among their fellow practitioners. But any young practitioner of today who has gone through college and the medical school, who has had the opportunity of watching his teachers at work in the study and treatment of patients, and who has himself laid the general foundations of right conduct, has a due sense of moral obligation and has a genuine desire to do unto others as he would that others should do unto him need have no fear of this bugbear. For, as far as the major morals of medical ethics are concerned, dealing as they do with the protection of human life, and with fair treatment of patients, of other doctors, and of the public at large, you are not likely to go astray; you will not become abortionists, or poisoners, or liars, or wilful deceivers of patients, or stealers of patients from other doctors, or quack practitioners of illegitimate pretensions, or extortionists. And, even in connection with the minor morals of the profession, which we call "medical manners" (or "medical etiquette"), you are not likely to make many errors if you will but follow the Golden Rule, and if you will

read the Code of Ethics of the American Medical Association. Medical manners, like ordinary manners, have to be learned, it is true. Young practitioners learn much about them by observing the behavior of their seniors; but there probably is room for an occasional talk to the senior students of the medical schools with regard to the minor morals of medicine concerning which the medical fledgling might sometimes be in doubt.

Physician and Patient.—In the medical school, the student is taught much about the diagnosis and cure of disease; in practice the doctor has to deal with sick human beings. Medical science is largely impersonal, whereas medical practice is largely a personal matter. The medical practitioner dare not handle a sick person as he would a healthy person, and the doctor who is sympathetic and tactful, who exhibits sound judgment, and who is lucky in the possession of what is called "common sense" will often be more successful in practice than his colleagues who may have greater scientific knowledge and training but who are lacking in the human qualities that win the favour, the confidence and the gratitude of patients. Fortunate is the doctor who is well-equipped on both the scientific side and the human side. But, alas, the extraordinary diagnostic skill of an Osler is not always associated with the optimism and the joviality that he showed; the admirable surgical technic of a Finney is not always combined with the good nature he manifests and the smile that he wears; nor would the reputation of a Wilmer be as great in ophthalmology as it is if his knowledge and skill were not supplemented by the gift of making his patient feel that his keenest interest has been excited in the treatment to be applied. It is a great art to know how to ingratiate one's self with a patient, to make a sick person feel that he is of maximal importance in the mind of the doctor for the time being, to know just how much time one must spend in listening to a patient's tale of woe, especially when that patient has the kind of memory that is spoken of as "total recall" and indulges in endless iteration or, as someone has wittily said, "likes to Fletcherize his troubles!" Here the doctor without great patience and without a lively sense of humour is lost; with these qualities, however, and with a certain subtle resourcefulness, the wise physician will listen long enough to satisfy, or will, when necessary, by means of some sudden quip, an unexpected story, or a verbal conceit, divert the patient's attention temporarily and, without giving offense, make a timely escape! It may be that your better training in psychiatry—your greater familiarity with affective-conative disturbances and with various types of psychopathic personalities—will make you, from the beginning of your practice, more resourceful in the management of difficult types, than were the newly graduated of my time. I hope so. But, if not, you will have to learn through your own experience; in time, through knowledge or perhaps through quickened intuition, you will find out how rapidly to "size up" the personalities that you encounter and the kinds of reactions that you may expect from them; and you will discover how best to get along harmoniously with people of most different types of make-up.

It would seem scarcely necessary to remind you of the importance of observing strictly professional secrecy regarding matters that are told you in confidence by your patients. The physician enters into relationships with persons and families in a manner not vouchsafed to others; he often learns of events and of situations that the world at large must never know. If he should discover that the reason why Miss Mary Smith went to Europe is not the one that is socially current, if he happens to know that the absence of children in Mrs. Jones' family is not Mrs. Jones' fault but due to a sterility of her husband because of earlier gonococcal experience, if he should hear people comment upon how divinely happy the Andersons are in their married life when Mrs. Anderson has just told him that unless her John changes soon and radically in his attitude toward her she really fears that she will be compelled to go to Reno, he will lock his information in his breast and will see to it that none of the closet skeletons shall be discovered by others through him. Occasionally, he may be made the unwilling depository of very unwelcome secrets; should this occur he will, when questioned about them, still cultivate the virtues of reticence and taciturnity with regard to them, or he may divert by assuming the disguise of loquacity and frankness concerning matters that are professionally in-

different. And if the doctor is a married man, let us hope that he may be lucky enough to have the kind of wife, who when asked about the rumor concerning one of her husband's patients will promptly reply "I wish I knew, but my husband makes it a rule not to talk to me about his patients; anything I learn about them I have to find out from other people!"

Some patients will make requests of their physicians that dare not be complied with. Thus, in the matter of certification of either health or disease, there are some persons who will not hesitate to urge their physicians to make statements that they know are not wholly true; in applying for life insurance, for example, they may wish their physician to forget an earlier acute rheumatic fever and a mitral lesion caused by it, or, on being summoned for jury duty, evasion may be attempted by feigning an illness that it is hoped may be certified to exist by the family doctor. Women who find themselves unwillingly pregnant may go to great lengths (in countries in which the interruption of pregnancy is illegal except when the life of the expectant mother is endangered) in their attempts to get a reputable practitioner to induce abortion. Robey tells of an instance in which the uterus was about to be emptied because of what appeared to be an uncontrollable vomiting of pregnancy; just in time, however, the shrewd practitioner in attendance discovered beneath the woman's pillow the feather with which at intervals she had been tickling her pharynx! The cruder method of laying a hundred dollar bill, or a thousand dollar bill, on the doctor's office table with a request for the interruption of pregnancy is less likely to be practised now-a-days, unless the applicant is sure that he is making his offer to some disreputable person known to be a willing law-breaker. Though the time may ultimately come when the interruption of pregnancy early in its course may be legalized in order to prevent the appalling mortality that occurs among those who resort surreptitiously to abortionists, in this country public opinion as yet will not countenance it. A situation that not infrequently arises in connection with abortion is that in which a reputable physician is called in after an abortion has been performed by someone else; in such an event, the doctor who is called, after controlling hemorrhage should refuse to take charge except in association with a trusted consultant who is willing to share the responsibility with him.

Since proof of the connection of disability with war service has become such an important matter for War Veterans' Compensation, the pressure brought to bear upon medical men to stretch their consciences in the matter of certification has become very heavy. Though many applicants are quite honest in the making of their requests, there are some who are insincere; it may not always be easy to be sure. I remember receiving recently an appealing letter from the widow of an esteemed war medical officer, in which she expressed the hope that I could certify that her husband's fatal illness had been the direct result of his war services, since with such a statement her payments from the government would be such that she could live more comfortably and could give her children a better education; on looking over my records, I found that the doctor when he consulted me had given no history of having had any symptoms of his malady previous to several years after his discharge from the service! It is pathetic in such instances to be compelled to have to disappoint hopes!

In the work at the Diagnostic Centre of the Veterans' Bureau at Mt. Alto, it has been found very helpful to enlist the aid of skilful psychiatrists in the differentiation between legitimate claims to service-connection of disability and sham claims to the same. It is a task for which not every practitioner is well-fitted; even the psychiatric expert may find difficulty at times in distinguishing one who attempts to lie and to swindle from malice aforethought and one who behaves similarly because of certain diseased conditions.

In the relation of physician to patient it should go almost without saying that it is the duty of the practitioner by means of his dress and his deportment to make the most favorable impression that he can in order to inspire the confidence and to secure the coöperation of his patient in whatever ought to be done. The doctor who is scrupulously neat in his personal appearance, who is familiar with and practices the amenities of polite society, who (though remaining sincere) tends to emphasize the cheerful and the hopeful sides of a situation rather than the gloomier view, and who, in his contact

with the sick, evinces a genuine interest in their welfare and a desire to be of help to them is a doctor whom people will welcome and will learn to love.

Relations to Other Physicians.—Harmony among medical men is of advantage not only to physicians themselves, but also to the patients for whom they care.

Some men are much more fortunate than others in their possession of the capacity to get on well with their colleagues in the profession. They see the good qualities of their fellow practitioners and, on suitable occasions, give due expression to their appreciation of those qualities; they fall over backward in seeing to it that, as far as they are concerned, every other practitioner shall have a "square deal"; they avoid, as far as they can, the excitation of envy or jealousy in any other doctor and refuse to believe or even to listen to derogatory criticism of other practitioners; and they throw in their lot with the organized profession, joining local, state and national medical societies, attending their meetings when they can, and, without obtrusiveness, participating in programs when they have anything of interest to contribute. There are, however, a few men who seem to be veritable geniuses in the arousal of disfavor and of antagonism; even though they do not go so far as to take patients unethically from other doctors, or as to speak actually disparagingly of their fellows, they have the bent of disposition or the traits of character that make it difficult for them to associate agreeably with others; they are, of course, greatly to be pitied! Luckily, now-a-days, in the colleges and in the medical schools, most men and women have the opportunity of "rubbing down their rough corners" and, through student associations, fraternities and sororities, learn the necessity of "give and take"; unless they have been too severely handicapped by their genotypes, or have been exceptionally unfortunate in the environmental influences to which they were earlier subjected, they enter the profession far better fitted for favorable adaptation than were their forerunners of the preceding century who entered proprietary medical schools without such collegiate and social training. Despite the best training, there will always be some who do not learn when either to hold their tongues or to close their ears! And the over-ambitious, too, we are likely always to have with us—persons who, however, not infrequently defeat their own purposes by their egocentricity or by their itch for publicity.

About the etiquette of *medical consultations* the young medical graduate should be thoroughly informed. The principal points are stressed in the brief printed codes of medical ethics, but, in addition to study of these codes, it would seem well worth while for the senior medical student to read the discussions of the topic in books on "Medical Ethics" available in the library. In all serious cases, or in cases in which there is room for doubt as to the diagnosis or the best form of treatment the practitioner in charge will be wise to favor consultation and the sharing of responsibility rather than to attempt to avoid it. Your request for consultation will be proof of your desire that the patient may miss no benefit that he could possibly have; moreover, it will be also a protection to you. These facts hold good not only for younger men in practice, but also for those of us who are older. It is far better to foresee the desirability of consultation and to ask the family to permit it, than to postpone it and have it forced upon you by the worried family; for if you suggest the consultation, yourself, you will almost certainly be permitted to call in a competent consultant of your own choice, one suited to the particular case under care, whereas, if you wait until the family or friends demand a consultation, they are all too prone to ask for some special doctor of whom they have heard, perhaps of no especial competence and one not at all to your liking. Even in cases in which there is really no doubt about the diagnosis or the best method of treatment, if you find that the relatives are anxious, it is the part of wisdom to ask if a consultation would not be a comfort and to express your readiness to arrange it if desired. If a particular specialist not of your choice should be urgently requested, you should acquiesce in the selection if he be a regular practitioner in good standing, but it is not necessary to accept an irregular practitioner or a cultist as a consultant. I half-way broke the latter rule once when I was asked to take care of a seriously ill patient who was being treated by a cultist; though I at first refused, I relented later when the family said I would not be asked actually to consult with the

person employed for they would be satisfied if the latter's treatment could be given *in absentia* from a window across the street! Even such an arrangement is not wholly unobjectionable for, if the patient recover, the cultist will probably claim the credit and, if the treatment be not successful, the failure will likely be attributed to your interference!

After the consultant has examined the patient, he and the physician go to another room where, by themselves, they discuss the diagnosis and the treatment. Afterwards, in the presence of the attending physician, the consultant reports frankly the results of the consultation to some member or members of the family, perhaps even to the patient, says a cheering word, if he conscientiously can do so, and leaves. The consultant does not see the patient again during the same illness unless specifically requested to do so by the attending physician. Sometimes, he may be embarrassed later by an urgent request from the family that he take charge of the case, but he must be adamant in his refusal to do so, though he will, of course, be glad to be of any help possible to the physician by whom he was called in consultation.

Aside from actual consultations, a practitioner may be called to see a patient of another doctor because of the enforced absence of the latter or because of some emergency; in such an event, the practitioner so-called should retire from the case and hand it over to the regular attendant as soon as the latter is available.

Appointments with other doctors (as far as possible with patients also) should be punctually kept; should an emergency arise that prevents the punctual keeping of an engagement, the other physician and the patient should be notified immediately by telephone of the necessity of a change, however slight, in the arrangements.

Professional Fees.—Owing to the differences in the conditions under which medical services are rendered to patients by physicians, and the great variations in training, skill, and reputation of physicians, surgeons, obstetricians and various specialists, there is difficulty in fixing their monetary value and it is impracticable at present at least, to set up any uniform scale of professional fees. There are, it is true, a few laymen who assert that they wonder why a millionaire should pay more than a day laborer for a consultation, or why an older physician or surgeon of national reputation should ask more for his services than a recent graduate who has not yet won his spurs; they assume that the making of a diagnosis or the prescribing of a treatment ought to be done for a fixed price, the same for everyone, like the charge for a pound of sugar or tea at a grocery! But this is not likely to become customary under our type of economic system.

A young physician when starting in general practice will do well to learn the usual medical fees for visits in his locality and be guided accordingly, being careful especially not to arouse the antagonism of his colleagues by charging less. Specialists and consultants may gradually increase their fees as they grow in reputation and in demand, but they should be careful, no matter how distinguished they may become, never to forget that medicine is a profession, not a trade, and that it is unworthy of any professional man to lay himself open to the charge that he is more interested in the exaction of a large fee than he is in treating his patient with all fairness. When extensive studies of a patient (involving x-ray examinations, laboratory tests and examinations by several specialists) have to be made, the physician who conducts, and is responsible for, the study should see to it (1) that, according to his best judgment, no unnecessary expense shall be incurred and (2) that the total cost to the patient shall not be disproportionate to his economic status and especially that it may be no real financial hardship to him.

So-called "fee-splitting" or secret division of fees, as well as payment of commissions for patients referred by other doctors are practices that are disgraceful and dishonorable to the profession. Though I have never known actually of such occurrences, I am told that they are met with and that this accounts for the strictness of the codes of medical ethics that have been formulated.

Doctors are notoriously bad business men and are often negligent in the rendering of bills and in the collection of fees. This is unfair to themselves and to their families. Bills should be sent regularly, and if they remain unpaid the reason for this should be sought. Though, with good-will on both sides, the financial arrangements between

doctors and patients can usually be arranged to the satisfaction of both, there will nearly always be a small residuum of instances in which the practitioners in fairness to himself may have to make use of a "collecting agency" or resort to suit in court (very distasteful to every physician and to be avoided except as a last resort when dealing with blameworthy recalcitrant debtors).

Practising Physicians and the Prevention of Disease.—Medical men in private practice are ever more keenly appreciative of their duty and privilege to participate in the prevention of disease and in increasing the vitality of the people that they serve. Doctors prefer to keep people well rather than merely to treat them after they bcome ill; though they are paid for both forms of services, they rejoice when the market for preventive and preservative services is more active than that for curative services. More and more laymen have become aware of the fact that it is wise for them to have the family doctor see, at regular intervals, each member of the family while apparently well and have him direct the mode of life in the way best calculated to maintain both physical and psychical normality.

This preventive work has led to possibilities greatly increased in our time, thanks to the vast amount of research that has been done and that has thrown light upon the etiology and pathogenesis of various disease-processes. Investigators of heredity have shown to us its enormous significance for human health and happiness and, through applications of the science of eugenics, medical practitioners are better able than ever before to encourage marriages and childbearing among the "fit" and to discourage marriage and parenthood among the "unfit." And students of environment have provided the data that form the basis for our newer rules of personal hygiene for all the periods of human life—infantile, adolescent, adult, senescent; the physical, psychical and social factors that impinge upon the human beings that come into existence, can be of very great importance for either the production, or the prevention, of disease.

Though public health officials are responsible for mass protection through control of water-supplies, of the disposal of sewage, of the inspection of foods and the like and through measures designed to prevent the spread of infectious diseases, it is the private practitioner who is responsible for the hygiene of single persons. The doctor in practice who is negligent of the responsibility must, now-a-days, be regarded as ethically faulty. It is highly desirable that family practitioners shall educate their clientele to coöperate in the application of the simple measures that go so far toward preserving personal health and happiness. A wise layman who is made cognizant of the possibilities will gladly defray the medical expense incurred for he will know that in time he will have been saved a much greater financial outlay. The time may come when families of all income levels may be able to make arrangements that will give them both preventive and curative care without financial hardship. The Committee on the Costs of Medical Care has suggested possible methods for this and even better plans than those that they have proposed may, in time, be forthcoming. In any case, it would seem tolerably certain that during the decades just ahead of us, the conditions of medical practice will undergo some striking changes. We can feel sure, I believe, that the medical profession will stand ready to participate in whatever plans seem best for the people at large, and, of course, such plans must provide for the adequate maintenance of a competent medical profession as well as for benefiting the public.

ANEURYSM OF THE SPLENIC ARTERY WITH FATAL HEMORRHAGE

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The subject of Aneurysm of the Splenic Artery presents itself as a distinct and outstanding entity in the realm of medicine. Textbooks of medicine and pathology fail to give it any mention or discussion. The reason for such is undoubtedly due to the rarity and intangibility of the subject. The symptoms and signs are such that the condition is rarely diagnosed or discovered except at autopsy.

Case History

This patient was suddenly taken sick at four-thirty on the morning of admission. The illness began with severe pain in the epigastrium below the sternum. There was no vomiting, no diarrhea, but the patient had been constipated for the past two days. The pain appeared in the epigastrium but did not radiate to the back, down the legs or into the shoulders. He was entirely conscious and was admitted to the hospital at noon.

Personal History.—He was fifty-eight years of age and had been married for twenty-six years but his wife had died six months previously. He had devoted his entire life to the managing of a grocery store and was a Protestant by faith. He was not in the habit of using alcohol in excess. Up to about three years previous to the present illness, he had always been healthy, at which time he noticed a tumor mass in the abdomen which was diagnosed as an enlarged spleen. This had remained about the same size continuously. There was no history of jaundice, the stools were normal, but he had frequent attacks of pain in the splenic region. At this same time his blood pressure was found to have been high and he was examined at monthly intervals for both the spleen and the blood pressure. He had never complained of headaches or dizziness but had noticed some recent visual difficulties. He was subject to attacks of dyspnea and considerable dry coughing associated with a filling of the throat interfering with speech at times. He had had frequent nose bleeds for the past several years which appeared suddenly. His appetite had always been good and he was not subject to nausea or vomiting. The eating of fried foods was usually accompanied by gas formation and much belching. There was no history of genito-urinary symptoms.

Physical Examination.—On admission he had a temperature of 101.8 by rectum, a pulse of 76, respirations 16, blood pressure 108/52 and a weight of 190 pounds. He was well-nourished but appeared acutely ill, delirious at times and conscious only at intervals. His skin was pale, as were the mucous membranes. The pupils were equal and reacted to light. There was no evidence of jaundice in the sclera. The ear and nose examinations were negative. The tongue was moderately coated but, aside from the paleness of the mucous membranes, the throat and mouth were negative. No palpable glands were found in the neck. The breath sounds appeared normal, the expansion of the chest was equal on both sides and there were no râles. Percussion was normal. The apex beat was one finger medial to the nipple line. The rate appeared quite normal and the rhythm regular. No aortic pulsation was seen but there was an accentuation of the aortic second sound. No murmurs were heard, no Corrigan pulse and no pistol-shot femorals. His abdomen was obese and showed no operative scars. He had been wearing a bilateral truss. The patient was relaxed and showed no muscular rigidity. Medially, the liver was palpable one to two fingers below the costal margin. There was a palpable mass approximately the size of a lemon in the left upper quadrant three fingers from the umbilicus which pulsated and had a systolic thrill. This mass was movable and moderately tender. The spleen was greatly enlarged along the left costal margin and firm in consistency. There were bilateral direct inguinal hernias but no bulging. The knee jerks were present and equal and no evidence of varicosities.

Impression.—1. Aneurysm of abdominal aorta. 2. Splenomegaly. 3. Bilateral direct inguinal hernia.

Laboratory Examinations.—No urine was obtained. The blood showed a hemoglobin of 65 per cent, 3,540,000 red cells and 6,600 white cells. The differential showed 15 per cent small lymphocytes, 2 per cent large lymphocytes, 82 per cent polymorphonuclear neutrophiles and 1 per cent basophiles. The spinal fluid was clear and showed one cell per cubic millimeter. The Globulin, Kahn, and Gold Curve tests all gave negative findings. An x-ray of the chest showed an enlargement of the heart, clear lung fields and normal diaphragm shadows.

Progress.—About three-thirty in the afternoon, the patient appeared to be in shock, which condition arose shortly following the spinal puncture. He developed Cheyne-Stokes respirations, talked incoherently and there was difficulty in ascertaining the cardiac and radial pulse. During the evening, he became rather irrational, complaining of severe pain in the epigastrium, belched a great deal and developed a labored respiration. His temperature was 101 rectally, respirations 36 and pulse 108. He was given cardiac stimulants, spirits of ammonia, caffeine sodium benzoate, adrenalin and whiskey. During the night, the respirations became more labored, the pulse weaker and more irregular and he died at six o'clock the following morning.

Post Morten Findings—Partial Autopsy:

Body is that of a well developed, obese white male. Post mortem rigidity not present. Orifices not discharging. Abdominal cavity is filled with free blood. Peritoneum normal and shiny.

Mesentery filled with hemorrhagic infiltration.

Stomach normal size and shape. Layers infiltrated with blood.

Intestines normal color, appearance and consistency.

Bladder partially filled with straw colored urine.

Prostate is firm and normal size.

Liver is increased in size, especially the medial portion. Increased portal connective tissue.

Stroma congested.

Gall bladder was normal in shape and size. No lithiasis. Filled with normal bile.

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Kidneys: Right kidney is enlarged and congested. Cysts present. Capsule strips with difficulty.

Left kidney enlarged and congested. Capsule strips with difficulty.

Spleen: Greatly enlarged. Increased in size and weight. Twelve inches by seven inches in width. Congested. Areas of infection.

Splenic Artery: Aneurysm present which has ruptured with hemorrhage into the surrounding tissues and abdominal cavity. Patches of calcification present. Splenic vein, greatly enlarged.

Aorta: Patches of calcification present throughout. No aneurysm present.

Pancreas: Increased in size. Increased fibrous tissue present.

Lungs: Normal crepitation throughout. Adhesions present to right pleural sack. No congestions or consolidation. No thrombi.

Heart: No marked enlargement. Pericardium shiny. Normal amount of pericardial fluid. Myocardium thickened especially in left ventricle. No vegetations or insufficiency of any of the valves. Normal size.

Diaphragm: Infiltration of blood between layers of the muscle.

Primary Cause of Death: Rupture of aneurysm of splenic artery.

Secondary Cause of Death:

1. Sclerosis and calcification of splenic artery and abdominal aorta.
2. Chronic passive congestion.
3. Splenomegaly.
4. Arteriosclerosis.

Anatomical Findings:

1. Ruptured aneurysm of splenic artery.
2. Splenomegaly.
3. Portal cirrhosis of the liver.
4. Renal arteriosclerosis.
5. Sclerosis and calcification of splenic artery and abdominal aorta.
6. Mesenteric hemorrhagic infiltration.
7. Hemorrhagic infiltration into wall of stomach, pancreas, spleen, and diaphragm.
8. Bilateral inguinal hernia direct.
9. Fibrosis of the pancreas.

Microscopic Report

Aorta: Atherosclerosis and also a well marked medial calcification.

Liver: Atrophy. Chronic passive congestion. Increased connective tissue in the portal canals. A long standing strophic cirrhosis of moderate degree, not recently progressive. Fat stain shows a moderate degenerative fatty infiltration.

Pancreas: Fatty atrophy. Increased stroma. Some of the islands show a well marked hyaline fibrosis. This patient was a potential, if not actual, diabetic. The portion of the pancreas in the wall of the aneurysmal dilatation shows a further fibrosis and marked pressure atrophy.

Kidneys: Cloudy swelling. Passive congestion. Retention cyst. Early arteriosclerotic nephropathy. No lipoidosis in the convoluted tubules, but in the loops of Henle there is a well marked degenerative fatty infiltration.

Spleen: Atrophy. Chronic passive congestion. Small areas of a recent hemorrhagic infarction.

Splenic Artery: Aneurysmal dilatation. Sclerosis and calcification of media. Hemorrhage into surrounding tissues.

Summary: Diabetes (?). Hyaline fibrosis of Islands of Langerhans. Sclerosis and medial calcification in aorta and splenic artery. Aneurysmal dilatation of splenic artery with surrounding areas of hemorrhage and multiple areas of infarction in spleen. Early nephropathia arteriosclerotica. Atrophic cirrhosis. Atrophy, passive congestion and parenchymatous degeneration of all organs examined.

Discussion

Although the formation of an aneurysm at the splenic artery certainly occurs more frequently than at the arteries of the other viscera, no comprehensive work on this subject is contained in the literature. Fatal hemorrhages are rare in aneurysm of the splenic artery, according to reports found in the literature. Two observations are briefly mentioned in this connection: Weigert describes as co-incidental postmortem findings an aneurysm with rupture into the splenic vein in a woman forty-nine years old. Winckler extirpated a spleen together with aneurysm in a nurse, twenty-five years old, who had suffered for six years from severe attacks of pain. Ponfick then found no less than three aneurysmal sacs at the splenic artery during anatomical examination of the specimen.

This case presents many interesting angles to the study of diagnosis and pathology. On the day of entrance to the hospital, a tentative diagnosis of aneurysm of the abdominal aorta was made on the findings of a palpable pulsating mass in the epigastrium. This mass had a systolic thrill but the patient did not have the typical pain in the back and legs. Cabot points out that in true abdominal aortic aneurysm, the tumor mass is seldom in the median line and it often appears just beneath the skin of the abdominal wall, seemingly separated from our finger-tips only by the thickness of blotting-paper.

This patient was diagnosed as having splenomegaly three years previous to death. The splenomegaly caused no symptoms except frequent attacks of pain. Simultaneously with the findings of splenomegaly was the finding of a hypertension which was undoubtedly the cause of the atherosclerosis. The hypertension was quite variable and gradually progressed from a primary benign hypertension to an early malignant hypertension. The microscopic pathological findings of all the organs, especially the kidneys, prove this statement conclusively in addition to the visual, respiratory and circulatory symptoms.

The explanation of the enlarged spleen is due to the aneurysm of the splenic artery and not to any organic disease. Syphilis

is ruled out by the negative spinal fluid examination and the repeated negative blood Wassermann tests. The microscopic pathology does not show any characteristic organic disease findings but shows an atrophy of the spleen with a chronic passive congestion. From these findings, a conclusion can be made that the aneurysm preceded the splenomegaly in formation. The aneurysmal sac was formed within a very firm capsule which prevented it from rupturing into the free abdominal cavity. The pressure of the aneurysmal sac upon the splenic vein prevented the regular outflow of blood. The splenic tumor which became gradually larger formed as a result of stasis resulting in atrophy and chronic passive congestion. On account of the congestive blood stream the perforation into the free abdominal cavity finally occurred at the above formed thin site of the wall, resulting in fatal hemorrhage.

The initial sudden pain and shock on the day of entrance to the hospital was undoubtedly due to a further enlargement of the aneurysmal dilatation in the wall of the artery and possibly less considerable hemorrhage taking place into the surrounding tissues as the gross pathology showed a profuse infiltration of blood into the diaphragm and gastric musculature. This would not have been accomplished so markedly by a sudden profuse hemorrhage of a complete initial perforation.

The question of diabetes in this patient is one worthy of consideration. In the three years of periodic medical treatment preceding death, the patient did not present the clinical symptoms or signs of diabetes. The urine was repeatedly negative for sugar. The microscopic pathological findings are consequently of a potential diabetes in which the pancreatic pathology was due to a secondary resultant reaction from the pressure of the neighboring aneurysm and the progressive hypertension picture producing the pathology.

The pathological findings in the other organs are essentially those of an arteriosclerotic condition which results in atrophy and chronic passive congestion.

Binder[3] in 1913 reported a similar case and findings in a man forty-seven years old. Up to the thirtieth year in life, the patient had allegedly been entirely healthy. During that year the first attack of gout (podagra) manifested itself. During the following years these attacks recurred on several occasions. At the age of forty, the patient alleges that he was confined to his bed for three months with peritonitis (?). About three months later severe attacks of pain in the splenic region manifested themselves. Later on, these colicky attacks again manifested themselves more frequently. Hematological examination did not reveal pathological transformation of the blood nor parasites of any kind. The spleen was clinically enlarged (percussion and palpation). After an interval of several months, severe pains accompanied by elevations of temperature, accelerated pulse, perspiration and sickly appearance, the splenic tumor became distinctly noticeable. A clinical diagnosis of infarct of the spleen, abscess of the spleen, and echinococcus were considered. The patient was admitted for operation but died very suddenly on the day prior to contemplated operation. Autopsy showed an aneurysm of the splenic artery with profuse hemorrhage. Since neither the anatomical findings nor the history indicated syphilis, the metabolic disease (gout) may be regarded as the cause of the relatively early atherosclerosis. The ordinary atherosclerotic processes frequently constitute the cause for the formation of aneurysm in the smaller arteries.

In the *Archives of Surgery* for August, 1931, Lower and Farrell, of Cleveland, present a case report and review of the literature. In this article, they state that in cases exhibiting paroxysmal attacks in the upper portion of the abdomen accompanied by gastro-intestinal hemorrhages, with the addition of a tumor in the epigastrium, and in which x-ray examination fails to show any organic lesion of the stomach, the possibility of a splenic aneurysm should be considered. In view of the pancreatic involvement in two cases of splenic aneurysm, examination of the stools for undigested fat should be made in order to determine whether a pancreatic deficiency exists. A study of the enzymatic strength of the urine would also be helpful, since in diseases of the pancreas an increased amylase content is not infrequently found in the urine. Wherever an abdominal tumor exists, stethoscopic examination should be made as a routine in order to determine the presence of a bruit.

A case these authors describe was that of a boy of sixteen admitted to the Cleveland Clinic complaining of severe abdominal pains. Eight years before admission, he had had a pain in the mid-epigastrium following an attack of whooping cough. The paroxysms of pain bore no relationship to the taking of food.

In the British Medical Journal for 1929, an article by Anderson and Gray describes a case report of aneurysm of the splenic artery and refers to fifty cases collected from the literature. The case reported was a woman aged forty-nine who died in collapse following an agonizing abdominal pain. At autopsy a saccular aneurysm of the splenic artery with an opening into the left lesser peritoneal cavity was disclosed. The aneurysm was false, for in the sac, which was the size of a cherry, there was 1.5 inch opening from the main splenic artery close to the hilus of the spleen. Microscopic study showed that the chief causes of the aneurysm were degeneration and necrosis in the media. There was no evidence of atheroma, generalized arterial disease or syphilis, but the findings suggested that the underlying condition was a subacute infection.

In fifty cases from the literature, the symptoms varied from those suggesting peptic ulcer or carcinoma of the stomach to that of ruptured tubal pregnancy. In the majority, indication of an acute abdominal condition with hemorrhage was present. Surgery is the only hope for cure.

In the Lyon Chirurgical of Lyons, Bertrand and Clavel, in September, 1929, described a study of twenty-seven cases in the literature. As a rule, the aneurysm ruptures into the abdominal cavity, and in thirteen of the cases of this series, this occurred. In six other patients, the rupture occurred directly into the stomach and in four into the colon. Twice it occurred simultaneously into the stomach and colon, and twice into the stomach and abdominal cavity.

In one case, the rupture occurred into the splenic vein. The spleen was enlarged in twelve cases, the ruptures were of varied configuration and their evolutive character was outstanding. The etiology was obscure, but the occurrence of a rupture may be favored by weakness of the surrounding tissue due either to ulceration or to other destructive processes. Early diagnosis is difficult but exploratory laparotomy should be done in cases of internal hemorrhage.

Garland[5] of Boston states in 1921 that more than 4,100 autopsies have been held at the Massachusetts General Hospital and only three cases of aneurysm of the splenic artery have been found. Dr. Garland has come across the mention of seventeen cases in the medical literature.

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RECENT PROGRESS IN TREATMENT OF PLUMBISM

According to Irving Gray, Brooklyn, the administration of a diet low in calcium and the addition of either ammonium chloride or phosphoric acid definitely causes an increased excretion of lead. The addition of diet high in phosphorus aids in the excretion of the lead. In several cases of chronic plumbism the lead in both the urine and feces was increased in amount after phosphate therapy was instituted. Experimental and practical experience bears out Shelling's opinion. The addition of a high phosphorus, high calory diet with sufficient vitamin content improved the general appearance; the nutritional requirements were adequate and the rate of excretion of lead was maintained. In the "deleading" treatment of his patients the author is now using the low calcium, high phosphorus diet with a ratio of 1-3 and 1-4. In persons who have absorbed lead it is possible that waves of liberation occur from time to time and produce symptoms of clinical activity. The lead that has been absorbed and is released at certain periods can be much more rapidly excreted at stated intervals with this type of treatment. Although complete "deleading" is not possible, as demonstrated experimentally, nevertheless it is reasonable to assume that the lead excreted is a large fraction of the lead that has been absorbed. The "deleading" treatment may have to be repeated at intervals if there is evidence of continued excretion of abnormal amounts of lead. It is advisable that all patients undergoing "deleading" treatment be hospitalized. The failure of acute toxic symptoms to develop when there is increased lead excretion is further proof of the fact that there is no parallel between the absorption and excretion of lead and the toxic manifestations. The estimation of lead in the excreta is of aid only in proving whether or not abnormal amounts of lead have been absorbed.—*Journal A. M. A.*, Jan. 19, 1935.

PHYSICIANS AS DRAMATISTS*

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"Knowledge of Nature," said Samuel Johnson, "is only half the task of the poet; he must be acquainted likewise with all the modes of life. His character requires that he estimate the happiness and misery of every condition and trace the changes of the human mind as they are modified by various institutions and accidental influences of climate or custom, from the sprightliness of infancy to the despondence of decrepitude; moreover, he must know many languages and many sciences."

Do not most physicians, by this measure, qualify as poets? Or, in the broader sense, as men of letters, for poets, novelists and dramatists are close of kin. The physician, by the peculiarities of his training and profession, must acquaint himself with the emotional world in which his patient lives; he must gauge the influences which incite anger, animosity, give joy, or cause pain and misery. If he can only elicit physical signs, he is a diagnostician, not a doctor. In like manner, a novelist must study life. He deals with personalities, their emotional and psychological components, and must ever observe people in order to discover and explain new modes of action. A writer who sets down only facts and draws conclusions therefrom is merely an historian, not a novelist.

Is it any wonder physicians are avid readers of good literature since the novelist has recorded and analyzed many pschological and emotional problems for him? The wonder is more physicians do not write. An abundance of material supplying characters, situations and action is present in every physician's experience. His relations with patients have involved questions by nature, psychological, philosophical, moral and religious, the stuff of which literature is made. One even wonders if the physician has not the opportunity to introduce a new point of view in literature. Hitherto, novelists have tended to ascribe most human conflicts to infractions of the seventh commandment. Might it not be that more often the fundamental cause were peptic ulcer, hyperthyroidism or even fallen arches? Certain we are that physical disability can produce profound mental and character changes. But physicians have written, and it is with pride we may note many colleagues among the great writers of all time. Robert Bridges, Tobias Smollett, Oliver Goldsmith, Sir Arthur Conan Doyle, Somerset Maugham, Schiller, Schnitzler, Chekhov, John Locke, Sir Thomas Browne, Keats, Erasmus, Darwin, Oliver Wendell Holmes come easily to mind, and there are many, many more.

Many of these literary artists wrote drama in addition to novels and poetry, a perfectly natural impulse. The technic is different, but the intent is the same, to portray life and to make something out of it. Many have written dramas that have been forgotten in time: Thomas Lodge, Matthew Gwine, Paul Hiffernan, Benjamin Hoadley, Frederick Wynne, George Sewell, James S. Knowles. Others are better known for novels, poems or essays: Tobias Smollett, Oliver Goldsmith, Robert Bridges. Still others have written dramas which bid fair to be for all time, and are equally immortal in literature of other types: Schnitzler, Schiller, Chekhov and Maugham. Some observations on the life and works of the better known of these may be of interest and profit. It will be interesting to discover, if we can, the physician in the dramatist. Does he influence the dramatist in his choice of material; is he a realist or a romanticist; does he make the dramatist view life objectively or does the author inject himself too much in his characters; does the dramatist reason through to a conclusion or does the physician in him fairly present all the facts and be chary of a positive solution to the problem?

Of Tobias Smollett you have recently heard much as a novelist, and the comment was made then that he wrote a drama "The

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Regicide," which was pretty generally adjudged as bad.

Oliver Goldsmith, though better known for other writings, wrote two dramas, one of which is still a familiar title, "She Stoops to Conquer." That he was a physician is still open to question, and what knowledge he may have gained from his training is nowhere reflected in his authorship. He was uncharitably regarded in his youth as dull and stupid but easily managed. A trial at law and several at medicine resulted in failure. His family's hard-earned, ill-spared money went right through his hands at the gaming tables and finally resulted in his setting out for the continent without leave. When he returned after a year of travel and adventure, he claimed to have a degree in medicine from the University of Louvain, but such a record has never been found. An attempt to practice promptly resulted in another failure. The last of him as a physician is to be found in the books of Surgeon's Hall, whence he had gone to apply for naval service. "James Bernard, mate to an hospital. Oliver Goldsmith found not qualified for ditto."

Johann Christoph Friedrich Schiller was born at Marbach in 1759, where his father was superintendent of the gardens and nurseries on the estates of Duke Karl of Wurtemburg. After Johann Schiller became a great figure in the world of letters, much significance came to be attached to his early environment. His father had seen a long career as an Army Surgeon, and with retirement became interested in the study of plants and trees, hence his position on the Duke's estate. He was a very ordinary man of no vision but very religious, of great integrity, and bound forever by the traditions of army discipline. His mother was a fine character but had no particular abilities. The boy grew up in this strict household with the intention of conforming to his parents' wishes that he become a cleric. He succeeded so well in school that the imperious Duke, in whose obligation his father was for his very livelihood, literally took the boy from his parents and kept him in his own Academy, which he personally conducted in the most strict military fashion. Young Schiller finally completed a medical course and was assigned by the Duke to one of his regiments as surgeon, a miserable position since it carried no rank and paid next to nothing. His repugnance to the machinelike orderliness of the school and his disappointment in receiving such a subordinate commission bred in him the spirit of revolt. He had already written surreptitiously a play called "The Robbers" during his last year at the Academy, which indeed expressed his own reactions to the stifling, disciplined life he had lived. It is the story of the revolt of a powerful nature against the conventional reality which places its narrow barriers, called laws and custom, in his way on all sides. A great man, he believes, should be a law unto himself, for society is at fault. This is plainly Rousseau, adapted to his own individual problem. The play was given at Mannheim, Schiller attending without official leave from his post. Both the import of the play and his own breach of discipline were reported to the Duke, who forbade him henceforth to write anything but medical treatises. This despotism was too much for Schiller, so he took the only way out, desertion and flight into another province. "The Robbers" was not well written, it is true, but it manifested great power and, as the production of a youth of twenty-one, was a notable performance.

Schiller was hopelessly in debt and without funds but, fortunately, found a patroness in Frau von Wolzogen, who hid him on her estate at Bauerbach. Here he brought out two plays, "Fiesco" and "Love and Intrigue," both of which won immediate acclaim, and here he pursued his studies, looking toward the writing of an historical drama, "Don Carlos." Embarrassments and discontent caused him to move on to Dresden, but on the way he obtained recognition from the Duke of Weimar for his "Don Carlos." This led to his writing "The History of the Revolt of the Netherlands." Either this latter work or his newly acquired friendship with Goethe won for him the professorship of History at Jena.

The next dramatic work appeared ten years later, the trilogy "Wallenstein," which is, if we except the First Part of Faust, the greatest tragedy written in the German language. He wrote it in three distinct parts, in verse, attempting to dramatize the form and pressure of the 30 years War at one of its most exciting moments. It was the first of historical tragedies and had no precedent. Schiller wrote not ob-

jectively but as a part of the thing he wrote. There is no relief from the all pervading seriousness of the work, the use of humor in a grave drama being repugnant to his sense of style. The success of this drama induced in Schiller such satisfaction of accomplishment that he gave the four remaining years of his life to writing historical drama. "Mary Stuart," "Maid of Orleans," "Bride of Messina" and "Wilhelm Tell," though of perhaps less artistic worth were much more popular with the German people.

It is fair to state that Schiller was not a great world poet. He was a German of the Germans, articulating their ideals and aspirations. His hatred of and revolt against tyranny remains his outstanding characteristic. He was dreamy and imaginative, a poet born, influenced by his mother's religious zeal and fired by the oppression which his keen intellect suffered at the Duke's Academy. His training as a physician was of passing moment and left no impression upon him as a poet.

The golden age of Russian literature, the 19th Century, mirrors seven great figures, Gogol, Turgenev, Dostoevski, Tolstoi, Gorki, Andreeu and the physician Chekhov. Though not the greatest of this group, Anton Chekhov nevertheless holds high rank, particularly in the field of drama, his name being linked inseparably to the Moscow Art Theatre and the modern drama. But let us read a portion of his letter to Rossolimo—"My autobiography? I suffer from a disease: autobiographophobia. To read any particulars about myself, and, worse still, to write them for publication, is a real torment to me. On a separate sheet I send you a few facts, very bald ones, and I can do no more." On a "separate sheet" we find—"I, A. Chekhov, was born Jan. 17, 1860, in Taganrog. I studied first at the Greek School near the church of King Constantine, then at the Taganrog grammar school. In 1879, I entered Moscow University, the Faculty of Medicine. I had then but a vague idea about the faculties generally, and I do not remember for what reason I chose the Medical Faculty, but I did not regret my choice afterwards. While still in my first year I began to publish in the weeklies and dailies, and these pursuits early in the 80's assumed a permanent professional character. In 1888, I was awarded the Pushkin prize. In 1890 I went to Saghalien in order to write a book on our convict settlement there. Not counting law reports, reviews, feuilletons, notices, and everything that I wrote from day to day for the newspapers which it would be difficult now to find and collect, during the twenty years of my literary work I have written and published over three hundred printed folios, including stories and novels. I have also written plays for the theatre."

Behind these "few facts, very bald ones" are more facts, very hypertrichotic. Anton's early life was very severely disciplined to long hours of hard work in his father's shop, in spite of which the boy had a reputation as being very mischievous and an excellent story teller. In Moscow, he not only pursued his medical studies but also supported his father, mother, sister, aunt and younger brother, by his unbelievably numerous contributions to current humorous publications. After obtaining his degree, he bought a farm for his family and entered into medical practice. His life thenceforth resolved itself into farming, writing, doctoring the peasants free of charge, and building schools for them at his own expense. We read of him organizing famine relief for his province, now setting off to battle the cholera epidemic almost singlehanded, and again, taking the census of his district. The last third of his life he was also fighting an active tuberculosis of the lungs, which ultimately caused his death at the age of forty-four. A rather active though short career for a consumptive, yet how characteristic of the physician.

Chekhov's greatness as a writer lay in the simple beauty of his style and in the accuracy with which he recorded events. He was able to write of commonplace people and their commonplace doings and yet make one feel that life was more than that. Gerhardi says, "His is the art of creating convincing illusions of the life that is." "Let me remind you," Chekhov wrote, "that the writers who, we say, are for all time, or are simply good, and who intoxicate us, have one common and very important characteristic; they are all going towards something and are summoning you towards it too, and you feel, not with your mind but with your whole being, that they have some object. The best of them are realistic and paint life as it is; but, through every line being soak-

ed in the consciousness of an object, you feel, besides life as it is, the life which ought to be, and that captivates you." Chekhov many times toyed with the drama, but, failing each time to win, vowed never again to be so humiliated. However, he, as a dramatist, and the Moscow Art Theatre came into being at the same time. Without Chekhov the Moscow Art Theatre would never have been, and without the Moscow Art Theatre, Chekhov would never have been a dramatist. Chekhov's dramas were in a style new to the Russians and needed a new theatre unbound by tradition to produce the effect he wished. His last five years were triumphant for the theatre and himself with the production in succession of "The Seagull," "Uncle Vanya," "The Three Sisters," and "The Cherry Orchard."

Chekhov believed in objectiveness as the prime consideration of a playwright, with utmost simplicity in manner and style. He tried to dramatize the seemingly threadbare facts of everyday existence without recourse to grandiose themes and startling effects. Nowhere will you find the psychological or the pathological horrors of the naturalist. Withal he stopped short of caricature. As he wrote to Souvorin, "The artist should be not the judge of his characters and their conversations, but only an unbiased witness. My business is merely to be able to distinguish between important and unimportant statements, to be able to illuminate the characters and speak their language." In that statement Chekhov the physician speaks for Chekhov the artist.

Chekhov lived in and wrote of the Decadent Russia whose people where helpless, ignorant peasants; intellectuals, bored with their learning and lacking imagination; or middle class shopkeepers, school teachers and physicians. A pathetic few idealists dared hope for a far off day when a new world would come upon them. Chekhov wrote of the middle class, the gloomy hopeless atmosphere in which they lived, their suffering, more mental than material, their longing for better things, how they despised work, and finally how they succumbed to defeat through circumstances and their own weakness. Often, as in "The Three Sisters," the sadness is illuminated by a suggestion of the need of faith and work. The worldly wise Vershinin has hope in ultimate progress to encourage him, but the Baron seems to forecast Soviet rule when he says, "Something formidable is threatening us; a strong cleansing storm is gathering; it will soon sweep our world clean of laziness, indifference, prejudice against work, and wretched boredom. I shall soon work, and within twenty-five to thirty years everyone will work—every one." Ironically enough, Chekhov's characters who work the hardest continue unhappy, for he realized that happiness requires something more.

Chekhov, then, was a pioneer in realism. Whereas his predecessors of the realistic school made the details of their stories characteristic of real life, they overlooked making the plot characteristic of real life; so much so that Mr. Bennett once confessed "as far as the story was concerned, the odds were against any novel happening in real life." Chekhov made his plots characteristic of real life by choosing for his themes stories which were not of the unlikely kind. Thus the odds were for, not against, Chekhov's stories happening in real life.

The influence of his professional training in Medicine, and his experience as a practicing physician, upon his literary endeavors was profound. We are pleased to read in his letter to Souvorin, the Lord Northcliffe of Russia, " . . . I have two professions, not one. Medicine is my lawful wife, and literature my mistress." That he recognized this influence, and valued it highly, is evident from his letter to Rossolimo, which contained his "autobiography." "I have no doubt that the study of the medical sciences has had an important influence on my literary work; they have considerably widened my range of observations, and enriched me with knowledge, the true value of which to me, as a writer, could be understood only by one who is himself a doctor. They also have had a directing influence and, thanks probably to my knowledge of medicine, I have managed to avoid many mistakes. My acquaintance with the natural sciences and with the scientific method has always kept me on my guard, and I have tried, wherever possible, to take the scientific data into consideration; and where this is impossible, I have preferred not to write at all. I will note in passing that the conditions of artistic creation do not always admit of complete agreement with scientific data; it is

impossible to represent on the stage a death from poisoning as it occurs in reality. But agreement with the facts of science should be felt even in that convention, that is, it must be clear to the reader or spectator that it is only a convention, and that he has to deal with a writer who is well informed. I do not belong to those fiction writers who take a negative attitude toward science; nor would I belong to the order of those who arrive at everything by their wits."

With Arthur Schnitzler's life, we are not so well acquainted except as his novels and dramas reveal him. He was very reticent and never gave interviews. Until the publication of his diaries and autobiography sometime hence, his present published works will have to tell of the man. When asked for complete biographical data, he submitted the following, "I was born in 1862 and was a physician." He was born into a well-to-do home of a famous Viennese laryngologist, Professor Johann Schnitzler. His father counted among his patients many dramatic and operatic stars, which may or may not have had something to do with the boy's early attempts at the writing of plays. The Schnitzlers were of Jewish stock and, in company with many of their fellows of that day, knew the trials and tribulations of the strong anti-Semitic feeling in Vienna.

Arthur received the degree of Doctor of Medicine from the University of Vienna in 1885 and spent the next three years in Vienna hospitals before joining his father's clinic as an assistant. He did some traveling and studying in England and Germany, and wrote reviews for the Wiene Medizinische Presse, a journal founded by his father in 1860. In 1887 he became editor of the Internationale Klinische Rundschau, a position he retained till 1894. The articles which he wrote for the latter journal dealt mainly with hypnotism, neurasthenia, telepathy and psychotherapy, subjects in which he had become deeply interested. He was an admirer of Freud, and Freud stated that Schnitzler's poetic intuition led to some of the same discoveries as his own researches.

Schnitzler's first non-professional writing appeared at the close of the 80's in Viennese periodicals in the form of poems and tales. These were collected and published in 1884 as playlets, called "Anatol," his own pseudonym and the name chosen for his chief character. In 1894 his first full length play, "Das Märchen," was presented and proved a failure, but was soon compensated for by "Liebelei." Thenceforth Schnitzler applied himself almost entirely to writing dramas and narratives in rapid succession.

If we take the characters of whom Schnitzler was most fond and look upon them as mirroring himself, we find him wanting to live yet ever conscious of death. The world he created is not unlike that of phantasy in which the frivolities of youth and love are indulged and responsibility taken lightly, yet ever in the background is death which will soon put an end to these transitory pleasures. Possibly Schnitzler's melancholy temperament, his sense of moral responsibility and position as a respectable upper class Jew made him desire this world of adventure and pleasure which was denied him. Yet, we find him idealistic and frankly skeptical of this fantastic existence. His dramas are for the most part concerned primarily with the aforementioned conventional theme, infractions of the seventh commandment. They are studies in psychology, and should be both interesting and profitable to the physician.

Schnitzler's first work, "Anatol," presents a frivolous and irresponsible Anatol; his cynical, skeptical friend Max; and a series of seven women, with each of whom Anatol has an affair. These characters are important for they recur again and again in Schnitzler's dramas under different names and circumstances, but representing these two attitudes toward life. They seem to represent a dualism in Schnitzler's own makeup: Anatol—the wishes, dreams, longings of the poet; and Max—the sane, responsible, skeptical scientist. At first, these two types are concerned with women. In Anatol, women are treated as frivolous creatures; as seen through the eyes of the philanderer, they are merely a source of pleasure, to be loved and caressed and soon forgotten. As occurs many times, the same may be presented from another point of view, in a succeeding drama. So, in "Liebelei," the game of love is looked at through the eyes of woman and we see that what in Anatol was merely an adventuresome flirtation for the man, may sometimes have serious consequences for the woman. This attitude of Schnitzler's is quite characteris-

tic. He is very careful of generalizations and does not want his readers to feel that what is right in one instance may be right the next time in a similar set of circumstances. To prove it, he wrote a narrative about a professor's wife, twenty years his junior, who becomes infatuated with a student. The professor sees them in a compromising situation and the youth knows they have been discovered, but the professor never indicates to his wife that he knows of her unfaithfulness. This shames the youth into flight. A play followed in which a professor, married to a woman twenty years his junior, finds that she is having an affair with his assistant. He appreciates that they are the same age and that they probably rightly belong together. He says nothing, hoping they will come to ask for her release, but they never come. After her death he learns of two things: his assistant had been wooing his fiancee for the past two years, and his wife, though knowing of the coming engagement, had voluntarily continued her affair. Thus in the first instance the professor was wise, in the second his counterpart played the fool. Schnitzler believed there is no cure-all for human ills. What may be one man's medicine is another's poison. His remedies apply only to the individuals examined, and only under a given set of circumstances. Here is the physician behind the poet.

In his more mature years Schnitzler turned to the problems of marriage. His husbands are a tolerant lot; being of a mature age and experience, they can forgive, forget and understand. The question comes up, would marriage have more stability and happiness if husband and wife, assured of mutual understanding and confidence, were to confess to each other every extra-marital desire? The dramatist physician answers, "Not necessarily." In two plays, "Die Frau Mit Dem Dolche" and "Zwischenspiel," the partners in marriage agree to tell each other of all of their temptations. In the former, the wife ultimately yields to a seducer; and in the latter, the constant revelations produced the unhappy state they hoped to avoid, that is, suspicion, jealousy, lack of affection. This play, "Zwischenspiel," projects quite accurately the so-called modern marriage, and discloses the pitfalls which one may expect to encounter. One realizes that the marriage based on pure friendship with avoidance of responsibilities is no guarantee of control of the emotions, and that no individual can be sure of himself or of another. Human nature is just that way. After Schnitzler sets out on a quest for new morals in marriage, we find he returns empty-handed. Our present system is inadequate but there is no better. Of certain safeguards, there are none, but that should not keep us from trying to find some.

In succession, several themes came to be treated: Who has the greater claim on a son, the father who merely gave him life or the foster father who reared him as his own? Has the physician the right to kill a patient, incurably ill, to relieve the latter's suffering? Should a wife be always faithful to her husband? All these questions must be answered by, "Perhaps," or "Not necessarily." In other words, Schnitzler attempts to show that we have scarcely begun to know ourselves. We are within the grip of forces, both within and without, of which we know nothing and about which we can do little. Therefore, be slow to condemn.

As early as 1900 Schnitzler conceived the idea of writing a play about physicians, giving a cross section of the medical world. He had grown up among physicians and knew much about medical problems from his own practice. His literary work as a whole shows this influence in many ways: the cool scientific attitude with which he approached his problems, his use of hypnotic phenomena, and the use of the physician as advisor and healer to his characters. First he considered dramatizing the complications that might arise from a conflict between the scientific and religious attitudes toward the sick. The first draft in 1899, preserved among his manuscripts, reads, "A physician expels a priest who wishes to administer the last sacrament to a dying person, because this dying person imagines himself healthy and does not suspect that he is at death's door." This theme might be presented from either the physician's or the priest's viewpoint. The second draft, a year later, projects the patient as a girl who does not suspect that her death is imminent. She is of a religious family. The Jewish physician wishes her to receive the last rites. Her betrothed refuses to admit the priest. The girl catches sight of the priest. Having been persuaded she is on the road to recov-

ery, she is quite overcome and the fear of death overtakes her. You notice the conflict is now between the priest and the betrothed, the former wanting to save a sinner's soul, and the latter, his loved one needless suffering. The physician might be expected to favor the fiance. So, to provide a neutral observer, the physician is made a Jew, who knows from experience that any interference on his part will be subject to misinterpretation; thus the priest is strengthened by indirection.

Three other plays occupied his attention now, making use of physicians and medical themes. By 1909 he was seeking anew a theme which would permit him to discuss problems of medical men. Being at this time much perturbed over the anti-Semitic question, he reverted to his original theme of 1899 and made the physician who expelled the priest a Jew. This act then would become a basis for unjustified anti-Jewish attacks. After much work it was finally published in 1912 as "Professor Bernhardi," and aroused both condemnation and approval.

The final version is unique in containing practically no reference to love or sex, and has only one female character, a nurse. A girl is dying of blood poisoning, and in her euphoria believes herself recovering. Just as Professor Bernhardi, director of the hospital, is leaving, he meets the priest whom the Catholic nurse has summoned to administer the last rites. The Professor believes it his duty as a physician not to upset the unsuspecting patient. He quietly asks the priest not to enter the room. The priest insists and a heated argument ensues, during which the well-meaning nurse has informed the girl that the priest is coming, so that contrary to Bernhardi's wishes death does not come to the patient while she is in her pleasant dreams. Bernhardi's actions are misinterpreted by his adversaries and the clerics intend to bring the incident before the government. The Professor wishes to avoid a scene and embarrassment to the Institute by offering a dignified explanation, but he is goaded into active defense. The climax is reached in a meeting of the professors of the Institute where many different types of physicians are represented, and speak. Bernhardi stands out by his quiet kindhearted manner, and he resigns rather than continue the friction among his colleagues. However, he is tried and convicted of forcibly hindering a priest in the exercise of his religious duty and is condemned to two months imprisonment. Throughout all efforts in his behalf by well-meaning friends and political advisors, he refuses to appeal or obtain certain judicial vindication. He is a physician whose aim in life is to cure people in contrast to politicians whose aim is to conform to changing public opinion. Thus, albeit inadequately, we see the development of the greatest of medical dramas.

And now we come to W. Somerset Maugham, a most popular contemporary playwright, who has yet to prove his greatness. He was educated at Heidelberg and studied medicine at the wish of his parents, though he never intended to practice. He has an M.R.C.S. from St. Thomas Hospital. In 1899 he produced a realistic play "Liza of Lambeth," some of the material for which dates to his days on Obstetrics in the poorer districts of London. It was roundly denounced as being untrue and failed to become popular. A one act play produced in Germany in 1902 likewise failed. "Man of Honor" is described by—"no laughs, no money." Realizing that the public was in no mood for realism, Maugham frankly and intentionally set out to write farcical comedy. So well did he succeed at the box office that in 1908 he had the distinction of seeing four of his plays running in London simultaneously.

He is cynical, believes life is a little harsh, and people somewhat trivial, if we judge from his dramas. His critics refrain from calling him great. While recognizing that he is tremendously popular, they fail to see any great depth or originality in his work. He seems to write as one who has studied the stage, the actors, and the public, and has unerringly supplied the requirements of each without actually creating anything. Collins recommends reading his plays but "the thing to stipulate is that the reader must be modern-minded and the reverse of squeamish, especially about the seventh commandment."

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THE RHINOLOGICAL MANAGEMENT OF THE ALLERGIC INDIVIDUAL*

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The rhinologist has been slow to accept the importance of allergy in many conditions of the respiratory tract, and especially the nose, because of two factors. First, the allergic background of the condition was not recognized, and secondly, when the allergic manifestations were recognized, methods of allergic diagnosis and subsequent treatment were inadequate or improper. The result was two dissatisfied individuals, the patient and the physician.

In order to obtain good results in these cases the rhinologist must acquaint himself with the signs and symptoms manifested in the allergic individual, and then equip himself and his office so that he may adequately treat the patient or work in close association with a competent allergist.

It appears that the nose and throat specialists have been somewhat lethargic in solving their problem in the old bugbear of sinus disease and other nasal conditions. The internist and pediatrician have been more alert and have through their investigations offered us a solution to many of our annoying problems. Some of these men have found the field of allergy so ramifying that they now limit their work solely to it and we speak of them as allergists.

The literature on allergy is extensive. The purpose of this paper is to bring to your attention some of the factors that are of importance to us as rhinologists. The history, physical examination and treatment will be considered separately in detail.

History

It has been estimated that about 1 to 2 per cent of the entire population of this country suffer from manifestations of nasal allergic disease. There are certain constitutional differences in the allergic individual, which allow him to become sensitized.[1] This constitutional susceptibility is hereditary in more than half of the cases. The specific hypersensitiveness is not inherited, but the ability to become sensitive is inherited.[9] The patient should be asked if any member of the immediate family or other relatives suffer from asthma, hay fever, urticaria, eczema, gastro-intestinal upsets associated with certain foods, migraine, etc. If there is an allergic background on both the maternal and paternal sides, then the offspring are more likely to become allergic and to a more severe degree.

A careful history of symptoms as related to time (perennial or seasonal), foods, environmental factors and acute infections must be noted.

Many patients who have allergic nasal reactions are led to believe that they are suffering from frequent recurring colds or chronic nasal infection, yet, interrogation proves the fact that the discharge is hardly ever purulent. It may be noted that these so-called colds vary in duration from sev-

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eral hours to a few days. An attack of acute purulent rhinitis has a tendency to run a definite course and is accompanied by the usual constitutional symptoms. Although the attack begins as a vasomotor reaction, with sneezing, watery or mucoid discharge and nasal obstruction, there is a gradual change in the character of the secretions. It must be remembered that an acute purulent rhinitis may be superimposed upon an allergic rhinitis.[3]

The criteria for the diagnosis of an allergic condition are:

1. History of recurrent typical attacks.
2. A personal history of some other typical allergic disturbance.
3. A family history of allergy.
4. Eosinophilia, especially during attacks.
5. Eosinophiles in secretion from affected part: nasal, ocular, bronchial.
6. History of definite association of the attack with a food or other factors.
7. Positive tests for allergens.
8. Relief of symptoms by adrenalin.

Three groups of allergic cases come under the observation of the nose and throat specialists for the relief of nasal symptoms.

1. Frank seasonal hay-fever.

2. Seasonal and perennial hay fever with atypical symptoms and a pathological picture suggestive of chronic sinusitis which may or may not be accompanied by other allergic manifestations.

3. Sub-hay fever group: the perennially stuffy-nosed mouth breathers; subject to frequent head colds and potentially hay fever or asthma sufferers, but have as yet evidenced no frank manifestations of allergy (allergic rhinitis).

These patients when interviewed will offer one or more of the following symptoms.

Ocular: Itching or smarting of the lids, injection and edema of the conjunctiva, occasionally a dry granular, injected conjunctiva, injection of the sclera and lacrimation.

Nasal: Sneezing, particularly in the morning on arising, with a watery or clear mucus secretion, obstruction with resultant mouth breathing and in childhood the facial deformity resulting from this type of breathing.

Pharyngeal and Oral: Itching of the palate and ears, swelling of the uvula and soft palate and extreme dryness of the throat.

Laryngeal: Cough, dry, hacking in character, hoarseness and not infrequent swelling of the glottis.

Bronchial: Cough which may or may not be productive of clear or muco-purulent material. Dyspnea, usually of the expiratory type, associated with wheezing, usually worse at night but which may occur at any time. The symptoms may be acute or chronic.

There are certain symptom-complexes which suggest that the individual is allergic.

1. Chronic rhinitis and "stuffy nose."
2. Chronic "sinusitis."
3. Nasal polyps.
4. Certain gastro-intestinal symptoms.
5. Migraine (40 per cent)
6. Epilepsy (about .1 per cent)
7. Follicular conjunctivitis
8. Chronic eczema (flexor surface type)
9. Chronic bronchitis without wheezing
10. Obscure skin manifestations.

Examination

Rhinoscopic examination: There is a marked variation in the pathologic changes corresponding somewhat to the severity and frequency of the attacks and the duration of the disease. The changes in the mucous membrane are present in both sides of the nose and usually the degree of involvement is about the same. In early cases the membrane shows a pinkish-gray discoloration and is swollen or boggy. It usually pits on pressure. In the inactive stage, the membrane appears discolored but may show only moderate swelling. This mild degree of pathologic change is particularly noted in hay fever cases. In true hay fever cases, the symptoms do not last long enough to produce permanent changes in the mucous membrane, and consequently the nose may appear normal at other times during the year, but this is not true in cases in which the symptoms are perennial.[1] In allergic cases of long duration a definite change takes place in the mucous membrane. The color is almost gray, this being caused by a general hyperplasia of the epithelium and a marked infiltration of eosinophiles and lymphocytes.[11]

Nasal Polyps: Nasal polyps are extremely common in allergic conditions. They are comparatively rare in non-allergic individuals, even in the presence of extensive

and chronic sinus infection. Polypoid degeneration is more common in the perennial types of respiratory allergy, which is somewhat suggestive of a bacterial factor.

Bacterial Factor: No one has conclusively demonstrated that bacteria may be considered allergic agents of the type of other allergens, such as foods, pollen, etc. It is the opinion of Piness and Miller[6] and other workers[10,12] that bacterial infection, focal or general in itself, is not the etiologic factor that produces respiratory allergic manifestations. Infections may be present in the respiratory tract in the presence of an allergic condition, but that is purely coincidental or secondary to the already existing allergic disease on the basis that chronic or repeated acute edema of the respiratory mucous membrane causes hyperplasia of the lining mucosa of the sinuses, interferes with their blood supply and drainage, and causes them to become fertile fields for bacterial invasion.

Others are not in accord with this opinion. Walker,[13] Rackemann,[8] Wilmer[14] and Goodale,[2] believe where no reactions are obtained by skin testing, that the individual is sensitive to bacteria. However, this conclusion is hardly justified because of a possible error in the skin testing.

Nasal Secretions: The nasal secretions vary from thin watery material to thick tenacious mucus. In the early cases the secretion is usually more profuse and watery. When marked changes are present in the mucous membrane, the secretions are thick, tenacious, and grayish. If a secondary infection is present, the secretions are yellowish from pus.

When the nasal discharge is more profuse, or limited to the night or morning upon arising, it is well to give the patient a glass slide so he may make the smear himself.

Egermann has stated that 72 per cent of allergic individuals in his series showed eosinophiles, while only 9 per cent of nonsensitive individuals showed eosinophiles. In our series of 175 allergic patients, the eosinophile count varied from 1 to 18 per cent with an average count of 5.2 per cent.

Most rhinologists are acquainted with the value or limitations of the x-ray in aiding in the diagnosis of sinus disease either from an allergic or bacterial cause. It has been demonstrated by Proetz that:

1. The membrane lining the maxillary sinus may through allergic or other agencies vary enormously in thickness in the course of a few hours.
2. The edema may be confined to a single sinus.
3. A single x-ray examination, revealing a thickened sinus membrane, is insufficient grounds for sinus surgery.[7]

Skin Testing

We have in general carried out the skin tests by both the scratch and intradermal methods. In all cases the scratch tests should be done first. These are followed by intradermal tests for those substances which were negative to the scratch.

It should be emphasized that only by the dual method of testing is it possible to determine all the sensitizing factors. Some allergens show up better by the scratch method, while others show up better by the intradermal method. There is considerable danger attached to making the intradermal tests without preliminary scratch testing. This danger consists in the possibility of severe general reactions, characterized by hay fever, asthma, hives or even severe anaphylactic shock. In all cases of allergic rhinitis an autogenous house dust extract should be made and the patient tested with this material. Occasionally it is even necessary to make extracts of the patient's own pillow, mattress and of the fur of his own pets.[4]

The limitations of sensitization tests are:

1. Clinically sensitive, but skin does not react.
2. Positive tests may be obtained but patient may not be clinically sensitive.
3. Patient may not have been tested for his specific allergens.
4. Material must be potent and free of foreign matter or tests may be negative or too many positive reactions (pseudo-reactions) occur.

Treatment

The treatment consists of the (1) treatment of the allergy and (2) the treatment of the nose and sinuses.

(1) The treatment of allergy itself consists of:

a. Prophylaxis: Every source of the offending allergens should be considered. The elimination of inhalants, food, dusts, powders, etc., which may be suspicious of-

fending substances should be instituted, whether positive skin tests do or do not reveal the specific etiologic factors.

The patient should be given these instructions for the preparation of a dust-free room:

1. Remove carpets, rugs, and drapes.
2. Remove doilies and covers from dressers.
3. Enclose mattress and pillows with rubber sheeting.
4. Wipe floor, radiators, woodwork and furniture with oil twice weekly.
5. Wash curtains once a week, if used at all.

b. Desensitization: Desensitization can be carried out for any allergen and is especially valuable in the case of pollens, house dust and the common foods which are not easily avoided in the diet. The method is very similar to pollen treatment and consists of some 15 to 30 injections of the specific extract, beginning with a dose below the point of tolerance, gradually increasing the amount with each injection. After such a course has been given, it may then be necessary to continue with one injection every two or three weeks to maintain immunity. Treatment with autogenous house dust extract in particular has been extremely successful and, combined with a dust-free environment, has produced brilliant results in our hands.

c. Use of drugs: Under this heading can be included internal medication with calcium, viosterol, ephedrine, and synthetic ephedrine. Therapy with acid preparations has not been very successful in our hands and we have been unable to repeat the excellent results reported by others using this method.

d. Non-specific therapy. We have found intravenous injections of calcium gluconate from 5 to 10 c.c. and injections of sodium salicylate 20%, 10 to 15 c.c., have in some patients produced excellent symptomatic relief. The use of non-specific therapy, including catarrhal vaccines, milk injections and typhoid vaccine, has occasionally been successful in providing temporary relief and should certainly be tried pending the application of more specific measures.

To recapitulate, the methods of therapy in allergy are:

1. Removal of offending agent.
2. Desensitization with specific extracts.
3. Non-specific therapy:
   a. catarrhal vaccine—stock or autogenous
   b. autoclaved milk
   c. typhoid vaccine
   d. nucleoprotein
   e. x-ray therapy
4. Symptomatic therapy for attacks.

(2) Treatment of the nose and sinuses: The local treatment in the acute stage of an allergic rhinitis gives only temporary relief in varying degrees and is confined largely to ephedrine. When ephedrine causes sneezing, synthetic ephedrine may be substituted. Nasal packs seem to aggravate the acute rhinitis. Operative treatment should not be performed during an acute attack. Even the removal of large polyps in an acute allergic stage does not give the relief expected. Treatment of patients with polyps must include attention to the allergic factor; the failure to reckon with this factor is the true cause for the post-operative recurrence of the condition.

Radium has been a helpful agent in the prevention of obstinate recurrent polyps; 50 mg. in a brass filter given for two to three hours at a time for two or three treatments at weekly intervals has been safe.

Deviations of the septum causing definite obstruction should be corrected. Electrocoagulation of hypertrophic turbinates appears to have advantages over surgical removal. Less of the mucous membrane is destroyed with preservation of its normal function.

The rhinologist is becoming more conservative in advising surgical intervention in sinusitis since he has learned that when an allergic background is present, the sinus disease frequently disappears upon correction of the allergic imbalance. However, when the pathologic changes in the mucous membrane of the sinuses have progressed too far for resolution and it has lost its ability to overcome the infection, then surgical intervention is imperative. Various authorities differ on the method of surgical attack. The patient is deserving of a trial of conservative surgery in many instances. When radical surgical intervention is indicated, that technic should be employed which permits the best exposure so that every vestige of mucous membrane can be removed and adequate drainage maintained in the future.

Occasionally in obstinate cases, the pa-

tient cannot be sufficiently relieved of the nasal symptoms by one or more of the procedures suggested. It is possible to render the mucous membrane less sensitive by the application of a caustic. Trichloracetic acid and silver nitrate have been employed. Trichloracetic acid is preferred. It may be used in full strength with caution. A small applicator should be used and the cotton so moistened that the cauterization can be limited to the desired areas. The injection of alcohol has not been used in this series.

When a purulent sinusitis exists with or without an allergic background, vaccines are a valuable adjunct in the treatment. Both the stock and autogenous vaccine has been employed. There appears to be a better response to the autogenous vaccine. Purer cultures can be obtained from the sinus directly than from the discharge in the nose. No standard dosage should be recommended. What may be adequate and tolerated by one individual, may be far from adequate in another.

We have observed that the histories in some of the cases of hay fever in children are as follows:

The tonsils and adenoids were taken out last June and he comes to see the doctor because of rose fever the following year. Or his tonsils were removed last August and he comes to see the doctor because of the fall type of hay fever.[5]

It is quite possible that in an individual constitutionally able to develop a sensitivity, it would be advisable not to traumatize the mucous membrane of the nose and throat during the pollinating seasons.

The causes for failure of diagnosis are:

a. History—It is important that a very careful history be taken so that clues to the specific allergen involved may be obtained.

b. Incomplete skin tests.

c. Failure of patient's skin to react to a specific allergen even though clinically sensitive.

d. Failure to associate an allergic background in early cases where the nasal signs and symptoms are borderline.

The causes for failure of treatment are:

a. Impotent extracts of specific allergens.

b. Insufficient dosage; for example, successful pollen therapy for hay fever in this climate usually means from 30,000 to 60,000 units of pollen extract for average cases, requiring from 25 to 35 injections to attain this dosage, in contradistinction to the usual 15 dose treatment sets.

c. Over-treatment—In very highly sensitive individuals the treatment itself may aggravate the patient's symptoms. Although these patients are rare, they require very minute doses and are often relieved of symptoms without any elevation of their dosage.

d. The treatment of the nose as a disease entity rather than a local manifestation of a general constitutional alteration.

The diagnosis and treatment of the allergic patient is an extremely individual matter and no routine can be mapped out which would apply to every patient. For this reason each case must be approached very cautiously and the diagnosis and treatment worked out for each individual to insure the best results.

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THE PERIODIC HEALTH SURVEY IN WOMEN

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Many pages have been written on the necessity of a periodic health examination. Its importance can not be over-emphasized. The public, however, still views the physician with a good deal of suspicion. It is a positive fact that many people regard our pleas for periodic health examination as merely a "drive" for more patients. Most physicians will agree that there are many women dying of cancer of the pelvic organs who should never have come to such an end. Most of the cancers of the pelvic organs we see are far advanced. Radical methods of treatment must be resorted to and in the end the results are not favorable. If we wish to continue to advance in our fight against cancer we must fully appreciate the importance of preventive medicine. The incidence of malignancy of the pelvic organs in women could be greatly reduced if patients would consent to a least a semi-annual pelvic examination. This is just as important in the unmarried as in the married woman; just as important in the nulliparous as in the multiparous; and just as important in the woman under forty years of age as in the woman above forty years of age.

The field of preventive medicine is full of noteworthy accomplishments. Diphtheria, scarlet fever, typhoid fever, and smallpox once headed the list of causes of death. Fewer death certificates are signed in which these diseases are the cause than ever before, and solely because of the work that has been done in preventive medicine.

In any coöperative procedure three requisites are necessary. First, there must be a *need* for such a program, whatever it may be; second, a *plan* or *method* of procedure; and third, a *desire* on the part of the members concerned to help. Certainly there is a *need* for greater coöperation between physicians and lay people in the prevention of cancer. If this be not true, why have hundreds of cancer centers been organized throughout the country during the past few years? Unfortunately, however, most of these centers are concerned mainly with the treatment of cancer after it has developed. Very few cancer clinics have as their main objective the treatment of those conditions which may develop into cancer. I offer a plan that should at least tend to prevent cancer of the female pelvic organs. All that remains then is a desire on the part of the physicians and lay people to coöperate.

Unfortunately, the lay person believes that no symptoms means no disease. Women patients should be instructed that an asymptomatic pelvis does not necessarily mean a normal pelvis. There is still much to be done in the field of preventive medicine, and in this endeavor the greatest task which confronts us is the education of the lay public through legitimate channels. We must be practical in our plea for public cooperation. I believe the time has come when we must face, on the field of battle, those commercial houses which have, during recent months, monopolized the radio. Their misrepresentations are evident to any doctor of medicine, but they appeal to the public. Recently the Federal Trade Commission was successful in exposing the "benefits" of a widely advertised pharmaceutical product. Commercial medicine, which is about as scientific as ditch digging, should be the target of every progressive physician. Of recent months many fine lectures have been given by physicians over the radio. There should be more such lectures.

Can carcinoma of the female organs be reduced appreciably simply by education of the public? I believe that it can. Perhaps the most outstanding worker in this field is Dr. Joseph C. Bloodgood of Baltimore, Maryland. His tireless efforts have been rewarded. Why? Because, through legitimate channels the lay public has been warned against neglecting lumps in the breasts, no matter how small or insignificant they may appear to be. Most women now know that a lump or injury to the breast, if treated early, will never result in cancer. Some twenty years ago eighty-five per cent of all tumors of the breast were malignant when

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first seen. At the present time, fully sixty per cent to seventy per cent of tumors of the breast are benign.

Dr. Bloodgood writes:

"As more and more women are correctly informed, and there is less delay in seeking advice after a warning by some sign or symptom in the breast, the number of patients in the clinically benign group increases rapidly. The clinical group in which operation has been decided against, and in which malignancy can be excluded with practically no risk, has in thirty-three years increased from less than one to more than seventy per cent. When the average duration of symptoms is decreased from three months to less than one month, there will be a greater increase, and the number of patients will be still further augmented when more women have been taught the importance of the periodic survey."

Of course, the breast is a more accessible organ than the pelvis. However, this should not be too great a stumbling block in attempting to get women to consent to periodic examinations. Years ago the breast was considered inaccessible from the standpoint of the patient. With the right kind of propaganda, women would soon regard examination of the pelvis in the same light as they now regard examination of the breast.

The first step then in this movement would be for every physician to talk to his women patients. To start with, no further means of informing the public would be necessary. I am sure that very few doctors can truthfully say that they know what is inside the pelvis of, say, twenty-five per cent of their women patients. The number of women who could be reached through this simple procedure would be tremendous. The radio, as mentioned above, would reach many more.

The second step in this movement should really be the first step. If we are to have more pelvic examinations, the average physician must know more about examination of the pelvic organs. He too must learn that a negative history does not mean a negative pelvis. Unfortunately, many of the younger physicians regard the examination of the pelvic organs as a simple procedure. Most of the young physician's knowledge of pelvic examinations is obtained while in medical school. Numerous didactic lectures make up the greater part of his teaching. An interne is so full of theory that he often fails to realize the importance of giving his theory a practical application. Theoretical training is useless unless it is followed by a well-rounded course in clinical observation. The most important part of a medical student's training begins with his interneship. Many internes fail to realize this, and unfortunately we, as licensed physicians, fail to realize it too. A carefully arranged program of instruction for internes is, in most hospitals, conspicuous by its absence. The interne is left to struggle through his interneship by himself. Our hospital clinics are full of abundant material for teaching purposes, not only for the interne, but for the young physician in practice. Every physician can not expect to become an expert in bimanual examinations, but at least he can become proficient enough to recognize those pelvic conditions which may later result in cancer.

A good pelvic examination has as its minimum requirements:

History Taking: A very complete history, remembering that the pelvis is but a part of the patient.

Physical Examination: A general physical examination should precede all special examinations. Careful attention should be given to the abdomen because of the close relationship between the pelvic and abdominal contents.

Vaginal Examination: This should always be done with surgical gloves and a good surgical lubricant. Inspection of the external genitalia will at once inform the examiner as to the distribution of hair, development, etc. Before beginning the examination proper the presence of pus in the urethral meatus may be determined by causing pressure on the anterior vaginal wall. At the same time any acute inflammatory process about the meatus may be noted. Following this, the index finger and thumb of the examining hand are used to palpate the labia and determine, if possible, the presence or absence of infection of the Bartholinian glands. Next the amount of relaxation of the vaginal walls may be determined by having the patient bear down.

Palpation is continued by introducing first one finger, then two, into the vaginal introitus. In so doing the condition of the perineal body, amount of relaxation of the pelvic floor, condition of perineal muscles and vaginal walls are noted. As the examining fingers are passed further up the vagina the cervix is located. Its position, size, shape and mobility are determined.

Erosion, laceration, cystic degeneration, and discharge can frequently be more satisfactorily determined with the examining fingers than on speculum examination. The cervix is completely encircled, and in so doing any fulness, bulging, masses, or tenderness in the cul-de-sac may be noted.

The pelvic examination as so far described is most important. Many examiners when doing a pelvic examination will determine the position and size of the fundus uteri and consider that a sufficient examination has been made. Such an examination will tell the inquisitive examiner very little.

The position of the fundus uteri can often be foretold by the position of the cervix. This may not always be true, however, because retro- or anteflexion without retroversion may cause displacement of the cervix.

In palpating the uterus, its position, size, shape and mobility are carefully noted. Irregularity in contour, pain on motion and degree of mobility may prove to be important factors in making a diagnosis. The adnexa are then examined for abnormalities. If masses are palpated, an attempt should be made to determine whether the mass is separate from, attached to, or an inseparable part of the uterus.

Rectal Examinations: No pelvic examination is complete without a rectal examination. It may substantiate one's pelvic findings, or, on the other hand, it may alter the findings considerably. At the same time abnormalities of the lower rectum may be determined.

In conclusion let me briefly summarize: There is, you will agree, a need for some sort of a plan whereby the incidence of carcinoma of the female pelvic organs can be reduced. The plan as I have outlined should include: (1) Education of the public by means of radio addresses and by personal conversation between physician and patient. (2) More pelvic examinations should be done by more doctors. (3) Better courses of instructions for our internes so that they may know the basic requirements of a satisfactory pelvic examination. All that remains is the desire for physicians and lay people to carry out some such plan.

ECTOPIC PREGNANCIES*

A Review of 218 Cases

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Ectopic pregnancy has always been a subject of considerable interest to medical men, but more especially during the past few years, apparently due to the increased number of such cases which have been diagnosed and properly treated. This increase in number may be attributed to various factors, among which is a better understanding of the condition with more accurate diagnosis and installation of proper treatment, by men who have had more thorough training and greater facilities for clinical experience. It is said that the increase in the incidence of can cer is due to better diagnosis of that condition; similarly, the same may be said of ectopic pregnancy.

Our interest in the subject was aroused by the marked rise in the number of cases coming into the Receiving Hospital during the past three or four years. Whereas, in 1926 and 1927, only ten to fifteen cases were seen during a year, at the present writing, four to five cases are seen monthly. An explanation for this may be found in the fact that since the economic depression, a greater number of patients have been cared for at the Receiving Hospital and also that the City of Detroit has been forced, through necessity, to reduce the number

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of patients sent to other hospitals in the city. The increased load on the Gynecological service has often been three or four times the number taken care of before 1929.

This paper will attempt to correlate the clinical findings in 218 cases of ectopic pregnancy treated during the years 1926 through 1934.

It has been said by Schumann that the first recorded case of extra-uterine pregnancy was that of Albucasis, an Arabian physician living in Spain about the middle of the Eleventh Century. The earliest definite surgical interference for the removal of an ectopic fetus was done by Primerose in 1594. Riolan, in 1604, recorded a case of tubal pregnancy with rupture and the classical symptoms. Mauriceau, in 1669, described a case of ruptured extra-uterine pregnancy rather elaborately and started a bitter medical controversy. The first suggestion of a true understanding of the cause and phenomena of extra-uterine pregnancy was found in the works of Pierre Dionis, published in 1718.

The premier operation for extra-uterine pregnancy in America was that of Dr. John Baird, a New York surgeon, who described it in a letter dated December 25, 1759. It was Lawson Tait, in 1883, who thoroughly established the operative treatment of ectopic pregnancy. The first American operation for ruptured ectopic pregnancy in the acute state was by Dr. Charles K. Briddon of New York, in October of 1883.

According to Schumann, pregnancy is extra-uterine once in every 300 cases. At the Jefferson Hospital the condition was encountered 83 times in 3,747 ward cases (2.4 per cent) as reported by Anspach in the recent volumes on Obstetrics and Gynecology edited by Curtis. At the Receiving Hospital during the past five years, there have been 140 cases of Ectopic pregnancy among 1,734 laparotomies, an incidence of 8.0 per cent—which is a high figure in comparison with other statistics. This can be explained however, as pointed out previously, by the change in class of patients seen at the hospital during this period of economic distress.

The etiology of this condition is thoroughly and theoretically described by all the textbooks and a myriad of conditions presented which might bring about an ectopic gestation. In brief, it may be stated that:

I. Any factor which mechanically hinders the progress of the fertilized ovum to the uterus will lead to arrested development at the point of impediment. Such factors are:

A. External factors distorting fallopian tube: 1. Chronic inflammation with adhesions attached to outer surface of tube, angulating it. 2. Uterine tumors—parovarian cysts, ovarian tumors, etc., which press on lumen of tube.

B. Internal factors: 1. Inflammatory changes in tubal mucosa with resultant fibrosis—formation of bands, pockets, etc. 2. Polyps of the tube. 3. Persistence of fetal type of tube. 4. Diverticula from lumen of the tube. 5. Accessory ostia. 6. External transmigration of the ovum: fertilized ovum on one side passing across pelvis to tube on opposite side. 7. Tubal spasm—this being brought on by tubal insufflation or use of abortifacients.

II. It is now said that the factor which favors an ectopic pregnancy irrespective of some type of obstruction is a decidual reaction stimulated by the corpus luteum hormone, that invites attachment to the surfaces with which the ovum comes in contact. Anspach gives a very concise and modern picture of this theory in Curtis' latest text, and says that such a reaction is essential to the implanatation and growth of the ovum.

The pathology of this condition is very well known and little need be said about it. We may emphasize the fact that the uterus does become enlarged as a result of the increased blood supply which develops when conception occurs and sometimes the uterus reaches the size of a six weeks pregnancy. The greatest change, however, occurs in the endometrium where there is a definite decidual reaction characteristic of pregnancy which is not always complete. This decidua remains until the fetus dies, after which it is cast off, and during this time the spotting or bleeding occurs. Wherever the ovum becomes attached, the reaction of the surrounding layer of ectoderm consisting of chorion-trophoblast cells, villi, etc., is fundamentally the same; whereas the reaction of the surrounding part, of necessity, depends upon and varies with the location of the fertilized ovum and the tissues involved. Thus, the development of the extra-uterine pregnancy with its possible sudden termination depends upon its location. An abdominal pregnancy may go to term whereas a tubal pregnancy usually terminates at six to eight weeks.

The classification of possible locations for extra-uterine pregnancies is very well described in Kelly's textbook and will not be considered here except to say that of the 218 cases reviewed, there were two cases of abdominal pregnancy, one ovarian pregnancy, one cornual pregnancy, and only nine cases of tubal abortion. Of these 218 cases, 210 patients were operated on, five died before operation could be done, and the other three patients improved with rest and supportive treatment, refused operation and went home upon signing their release.

An interesting observation noted was: that of this group of patients, 161 were white and only fifty-seven were colored, although the gynecological service at the Receiving Hospital usually runs from 50 to 65 per cent colored patients. The textbooks on gynecology say that race exerts no influence on the occurrence of ectopic pregnancy, yet our figures put us at a loss for an explanation.

The youngest patient in our series was eighteen years old and the oldest, forty-three. Seventy-nine per cent of the patients were in the age group of twenty-two to thirty-six years of age; or compared to Farrar's statistics based on 262 cases where she found 63 per cent of the patients between the ages of twenty-four and thirty-three, in our group 58 per cent occurred in that age period of twenty-four to thirty-three years.

All of these patients were married or had been married, and 159 patients had full term pregnancies at least one or more times; with the latest pregnancy occurring one and one-half years before the ectopic, in two patients; two years in four patients; and the remaining 153 patients having had their last pregnancy three to eighteen years prior. Sixty-one patients although married for periods varying from two to twenty-two years, had never had full term pregnancies; while of these sixty-one, nine patients had at least one miscarriage or incomplete abortion. In the group of 159 cases, sixty-eight patients gave a history of an incomplete abortion or miscarriage which might have been an etiological factor in the ectopic pregnancy which occurred later.

It is generally assumed that a patient having once been operated for an ectopic pregnancy is susceptible or liable to have another occur, provided only the affected tube has been removed. Allowing for the abdominal, ovarian, and cornual pregnancies, there were 206 tubal pregnancies operated, and of these, only 8 patients had been previously operated for ectopic pregnancy. However, this is not direct evidence against the recurrence of ectopic gestation because it is impossible to follow up the operated cases on a charity service such as the one at Receiving Hospital, for any length of time. These people frequently are transients, irresponsible, and as a rule are poorly educated and thus minimize the coöperation necessary for a thorough follow-up study.

In studying this series, our attention was aroused by the number of patients operated for conditions diagnosed differently than the condition found—I refer to the so-called chronic or old ectopic pregnancy. With this thought in mind, we have classified this series into the acute ectopic and the chronic or old ectopic. The point of differentiation we asumed to be, the length of time after the rupture occurred before the patient was operated. Allowing as a standard, a period of 24 to 48 hours before admission and operation by reason of the patient's history, we find that among 218 cases, 117 may be called old ectopics and 101 acute.

The acute cases presented no special difficulty in diagnosis. The symptoms closely approximated the textbook description and in order of importance and frequency of appearance in this group, we list the following:

Subjective symptoms consisted of sudden onset of acute lower abdominal pain, frequently awaking the patient from a sound sleep. In about 30 per cent of these cases, pain was also referred to the shoulder posteriorly. It was interesting to note that the pain did not necessarily occur on the side of the rupture, for frequently the patient complained of pain on the right or left side and the rupture was found to occur on the opposite side. There was faintness or dizziness, especially when patient attempted to rise or move about. Irregular menses or missed period was a symptom almost 100 per cent constant but of course very little attention was paid to it by the patient, and careful questioning was frequently necessary to bring out that fact.

Spotting or bleeding occurred in nearly all of the cases and varied from a slight staining of the underwear to the passage of very large clots which at times simulated an incomplete abortion. In every case, this spotting occurred before the onset of pain. There was usually a period of sterility; lasting from one and one-half to twenty-two years. Nausea and vomiting occurred in about 25 per cent of the cases and varied very much in severity. Pain on defecation was noted in about 25 per cent of the cases.

The objective signs consisted of shock and evidences of hemorrhage which was very typical in the acute cases, and even the colored patients looked pale, if that expression may be used. Air-hunger was frequently present, too. The next important objective sign was exquisite tenderness on movement of cervix. This was universally present in all the acute cases even though a definite mass could not be felt in the pelvis. A mass was palpable in the cul-de-sac or either adnexæ, depending upon location of tube affected. An excellent diagnostic aid is the aspiration of the cul-de-sac contents by means of a long sharp needle and syringe. This was used seventeen times in this group with the presence of blood disclosed every time. Enlargement of uterus and softening of cervix—this was not a very constant sign and, due to severe pain caused by examination, the exact size and position of uterus could not always be made out. Microscopic examination of uterine curettings was made in four cases with negative results—probably this was due to expulsion of all the decidual cells with early death of extra-uterine fetus.

All textbooks and many observers mention the presence of Cullen's sign; which is a discoloration of the umbilicus due to free intra-peritoneal blood. Not once was this sign seen in either the acute or old ectopic gestations.

Laboratory findings showed a deviation in the normal blood picture. In recent hemorrhage a secondary anemia was noted with a rise in the total white cell count in 50 per cent of the cases. At times this rise was as high as 37,000 cells but as a rule the filament non-filament count remained practically normal, which differentiated the ectopic condition from an inflammatory one.

The sedimentation test was done in 190 of these cases and in nearly every case the red cells settled out more rapidly than normal although never as rapid as in the cases of acute infection, pelvic abscesses, or tubo-ovarian abscesses. This test then is another diagnostic aid in conjunction with the filament non-filament count, but both laboratory tests are even more important in the question of old ectopics.

A study of the 117 old ectopic cases disclosed the fact that in spite of massive old hemorrhages in the abdomen or pelvis, the amount of discomfort suffered by the patient was surprisingly small.

The most important symptom, seen in every one of these cases, was that of irregular bleeding and irregular menses lasting over a period of several months. Pain, usually definitely localized in either quadrant was the next most important symptom and was present in 97 of the cases. This pain was not as sharp or acute as in the recent ectopics but more cramp-like in nature and intermittent. Only seven of these patients complained of pain transmitted to the shoulder. Nausea and vomiting was more pronounced in these cases and painful defecation more frequent in occurrence.

The objective signs disclosed an individual with a moderate secondary anemia and physical findings of pelvic infection. With the history of irregular menses, lower abdominal pain and the presence of a pelvic mass of varying size and consistency, the most commonly made diagnosis was that of tubo-ovarian abscess or cul-de-sac abscess, depending upon location of the hemorrhagic mass. In eighty-six of these 117 cases such a diagnosis was made, and it is interesting to note that in 90 per cent of the ninety-six cases where a sedimentation test had been done, the rate was not as rapid in these chronic ectopics as in pelvic infections as reported by us in a previous paper. The rate noted for conditions with pus in the pelvis was usually below 25 minutes, whereas in these cases of ectopic pregnancy the rate was over forty minutes. The exceptions were those cases of ectopic which had become infected. In the non-infected ectopic pregnancy of long standing, there usually was a moderate degree of anemia, both in hemoglobin and red blood cell count. The leukocyte count was normal or slightly elevated, while the per-

centage of non-filament cells was normal or slightly above the normal of 8 to 16 per cent. In the inflammatory conditions of the pelvis we had previously noted an increase in the non-filament count at times as high as 58 per cent, with a corresponding decrease in the lymphocytes. Thus we have another differential point in the diagnosis of old ectopic pregnancy from pelvic infection.

Of the 218 cases, 210 patients were operated on, and of these, 198 recovered, which gives us an operative mortality of 5.7 per cent. A discussion of these deaths will be given later. It was and still is the rule of our staff never to operate the acute cases until the shock has been treated and the patient has responded to supportive treatment. This means using intravenous glucose, interstitial salines and blood transfusions. An attempt was always made to bring the patients' blood pressure over 100 mm. systolic before opening the abdomen. General anesthetic, consisting of gas induction and ether was used in 192 cases and spinal in eighteen cases. In none of the eighteen cases of spinal anesthesia was there an anesthetic accident, which confirms Dr. Krieg's observation in a recent paper on spinal anesthesia, that spinal anesthesia is not contra-indicated in cases of recent shock, if the shock is treated before operation. Direct transfusion was resorted to in 51 of the acute cases, as a rule, before or directly after operation. It has been found that the proper time is directly before opening the abdomen because there seems to be considerably more shock to opening the peritoneal cavity in the presence of a severe anemia than ordinarily. One of the men operating had a patient die because the abdomen was opened before the donor arrived. In the recent cases of hemorrhage, with bright fresh blood in the abdomen, the various operators have sponged out the blood, placed it in sterile containers holding 200 to 300 c.c. of warm normal saline and 50 to 100 c.c. of 5 per cent sodium citrate, and had an assistant stir it rapidly and then filter through gauze two or three times before injecting this solution back into the patient's blood stream. This method of auto-transfusion had been used on twenty-one cases of acute hemorrhage, with no untoward results. The patients respond very well to this procedure.

As mentioned before, there were two abdominal pregnancies, one ovarian pregnancy, and one right cornual pregnancy. There were 206 tubal pregnancies in which operation was performed, with the right tube affected 104 times, and the left tube 102 times. Tubal abortions were seen only on nine occasions. In all cases conservative surgery was done, especially in the acute cases where only the acute condition was relieved and the patient's general condition considered before attempting other surgery; such as appendectomy or removal of other tube, if diseased. In the chronic cases more radical surgery was done depending upon the amount of pathologic change found. In 197 cases of ruptured tubal pregnancy, the rupture occurred in the distal one-third of the tube in 128 cases, middle third 52 times, and the proximal third seventeen times. The pathologist also reported evidence of tubal inflammation in 130 cases or an incidence of 66.2 per cent. The salpingitis was of varying degrees from acute to hydrosalpinx type and it may be assumed from these figures that tubal infection is one of the most common causes of ectopic pregnancy.

The average length of time of the patients in the hospital was twelve to sixteen days, with an average operative morbidity of ten to twelve days. Very rarely did a patient remain longer than sixteen days—one in question was in several months before referred to the Gynecology department. She had been diagnosed and treated as a primary anemia for two and one-half months and was the oldest patient in our group. In the follow-up service in the outpatient department approximately 75 per cent returned in four to six weeks for final examination. In none of these were there found any postoperative complications.

There were seventeen deaths in this series of 218 cases, four occurring within twelve hours after admission, these patients being moribund on admission and not responding to supportive treatment. One patient was white and three were colored patients, and had histories and physical findings of acute ruptured ectopics; later proven by coroner. This may explain why so few colored patients were found to have ectopics, on the Receiving Hospital Gyne-

cological Service. The colored race apparently shuns the hospital until it is only one step removed from the coroner's office. The other death before operation occurred in a white woman who had an acute rupture about twelve hours before admission. She was in shock and moribund; was given intravenous glucose on admission and three hours after admission given 500 c.c. whole blood by direct transfusion; she never did respond to supportive treatment and died forty-eight hours after admission.

Of the twelve deaths occurring after operation, four of the patients were colored and eight were white. Peritonitis was the cause of death in two cases. One patient died of paralytic ileus three days after laparotomy. One died three days after operation of a hypostatic pneumonia. Two died on the operating table of shock before the donor arrived. Six died within forty-eight hours after operation in spite of supportive treatment and blood transfusion. These may be classified as deaths due to shock. One of the peritonitis deaths occurred in a colored woman, aged thirty-six, who at operation was found to have an unruptured right tubal pregnancy of four and one-half months' duration. This patient died four days after operation.

Conclusions

1. There appears to be an increase in the number of cases of ectopic pregnancy.

2. Of the 218 cases presented, 161 (73.8 per cent) were white women, and fifty-seven (26.2 per cent) were of the negro race.

(3) This series can be classified readily into an acute and chronic group; there being 101 of the former and 117 of the latter.

(4) Seventy-nine per cent of these patients were in the age group of twenty-two to thirty-six years of age.

(5) Irregular or missed period was the most important symptom common to both acute and chronic ectopics.

(6) The sedimentation test and filament non-filament differential count are valuable adjuncts in diagnosis—especially in the chronic cases.

(7) In 210 operated cases there were twelve deaths—an operative mortality of 5.7 per cent.

(8) Blood transfusion is very valuable supportive treatment in the acute cases; auto-transfusion offers an easy valuable method in certain cases.

HYPERPARATHYROIDISM—WITH BLOOD PHOSPHORUS AND CALCIUM CHANGES

A Report of Three Cases

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Within the last few years there has been considerable investigation and work on that symptom complex known now as hyperparathyroidism or parathyroidism. A disease characterized by a high blood calcium, low blood phosphorus and high calcium and phosphorus excreted in the urine, with symptoms that are due to a demineralization of the skeletal structures.

In the cases presented by Albright, Aub, and Bauer, those that showed a low serum phosphorus were the typical hyperparathyroidism cases. Anything below 3 mg. per 100 c.c. were relieved by operation. One case had 4.7 mg. and that case had tetany. One 3.6 mg. was a very early case. One 3.1 mg. had a thyroid tumor.

In my opinion more stress should be laid on the low serum phosphorus than on the high serum calcium, as most cases will prove true to form.

In presenting two cases of parathyroidectomized individuals, Shelling and Goodman proved that in the opposite syndrome, namely parathyroid tetany, the cause of the tetany was not so much the low serum calcium as the relatively high serum phosphor-

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us. They also showed that the tetany resulting from removing too much parathyroid tissue can be successfully treated by a low phosphorus diet without parathyroid hormone.

The symptoms that Ballin described as being most prominent in hyperparathyroidism are back-leg-ache, pain in muscles and bones, muscular weakness that is very pronounced, and frequent falls due to hypotonia. He likewise pointed out that compression fracture of the spine should if caused without undue violence be an indication for blood chemistry study with a suspicion of hyperparathyroidism in one's mind.

Ballin grouped osteitis fibrosa cystica generalisata, Paget's disease, arthritis due to a demineralization and certain muscular hypotonia under the classification of parathyroidism.

Albright, Aub, and Bauer in a very splendid description, classified hyperparathyroidism in the following groups; skeletal decalcification with cysts (Von Recklinghausen's disease), osteoporotic form decalcification without cysts or tumors, Paget's type, and renal type.

Albright, Aub, and Bauer described a very early complaint that most of these cases have, and that is symptoms that are referable to flat feet, and reports some that were treated as hypochondriac and neurasthenic patients due to these symptoms. My case, Mr. J. E., on the first examination gave me the impression of a hypochondriac.

R. V. Funsten reports twenty-six cases of arthritis, following parathyroidectomy, of which only one case failed to show improvement. Of course, all these had the typical blood serum picture of hyperparathyroidism.

The cardinal symptoms and findings are:

History of long duration with exception of the acute fulminating type.

Age incidence—any age. The greatest number come between 20 and 50.

Flat feet for a number of years.

Back-leg-ache.

Pain in bones and muscles.

Immobilization, stiffness, and pain in joints involved.

Loss of stature.

Kyphosis.

In the arthritic type, as in the case of Mrs. L. E. the joint acutely involved had the feeling and gave the sensation to the examiner as though he was dealing with an ununited fracture, due to the demineralization of the bony tissues.

A compressed fracture of the vertebræ without undue violence. Case T. S. had the appearance of an old fractured back.

X-ray finding of a general demineralization of the bones.

High serum calcium, low serum phosphorous, and high calcium and phosphorous excretion.

Anemia and leukopenia.

F. Mandl and R. Uebellör were the first to successfully remove a parathyroid tumor for osteitis fibrosa generalisata in 1925.

The pathologic change usually found in hyperparathyroidism is either an adenoma of one or more of the parathyroid bodies or a hyperplasia of these bodies.

In the blood chemistry, a serum calcium above 11 mg. per 100 c.c. with a serum phosphorous below 3.5 mg. per 100 c.c. is an indication of abnormal calcium and phosphorus metabolism.

Due to the fact that a number of investigators have described hyperparathyroidism, a great number of cases have been found. Some that were classified as hypertrophic arthritis, so called lumbago, sciatica, flat feet, and fractures without sufficient explanation as to cause. Today with the aid of x-ray and adequate blood chemistry we can diagnose and successfully treat these obscure cases.

The three cases which I am reporting would fall in the osteoporotic form as classified by Albright, Aub, and Bauer.

One case, Mrs. L. E., was an arthritic type with involvement of hands, knees, elbows, and ankles. Another, Mr. T. S., had an involvement of the vertebræ. The third, Mr. J. E., had a vertebral and muscular involvement. The second, Mr. T. S., did not show a typical high calcium, but showed a low blood phosphorus. The first, Mrs. L. E., developed a mild tetany following parathyroidectomy and convinced me that the change produced in the phosphorous metabolism is as great a factor as the change produced in the calcium metabolism. As suggested in the paper by Shelling and Goodman, she was placed on a very low phosphorus diet, given calcium gluconate by mouth along with magnesium carbonate, and within a few days showed remarkable improvement. She was not given any parathyroid hormone.

In the arthritic type of parathyroidism, the demineralized joint acutely involved will give a feeling of soft bone with crepitation and a sensation as though one were dealing with an un-united fracture.

The cases which I present are as follows:

Case 1.—Mrs. L. E., age fifty-one, housewife, widow, was admitted to the Evangelical Deaconess Hospital, July 28, 1933. Her past history was negative. She was well until two years ago when she began to have swelling in her ankles and feet. Her knees were next affected and then her elbows, wrists and fingers. All these joints later became stiff, swollen, and very painful. Physical examination showed her nutrition good, her blood pressure was, diastolic, 88; systolic, 148. Her ankles were swollen and tender, and showed limitation of movement. The knees were large, swollen, tender, and there was limitation of extension. The wrists were stiff and swollen, with limitation of motion. The phalangeal joints were hypertrophic, tender, and stiff. The laboratory examination revealed the following condition: blood calcium 12 mg. per 100 c.c., phosphorus 1.6 mg. per 100 c.c. The x-ray examination showed extensive demineralization of bones and joints. An operation was performed by Dr. D. J. Leithauser on August 16, 1933. Three parathyroid bodies were removed and reported by the laboratory as hyperplasia of the parathyroids. On August 22, following parathyroidectomy, her blood calcium was 6.67 mg. per 100 c.c., and her blood phosphorus was 5.58 mg. per 100 c.c. Immediately after the operation all pain disappeared from her joints and has not recurred. This patient had since developed tetany and her blood calcium was 8.8 mg. per 100 c.c. Phosphorus 5 mg. per 100 c.c. (11-24-34. As suggested in an article by Shelling and Goodman, she was placed on a low phosphorus diet, given calcium gluconate by mouth along with magnesium carbonate. The results of this treatment for her tetany were extremely satisfactory. She became very comfortable, with no pain in any joint, nor involvement of new joints, and her tetany became under control. At her last examination over a year after her operation she showed continued improvement. Her blood calcium was 10 mg. per 100 c.c., and her blood phosphorus was 4.7 mg. per 100 c.c.

Case 2.—Mr. T. S., aged thirty-four, a mechanic, is married and has three children living and well. His family history was negative. His past history revealed mumps and measles during childhood. In 1914, he consulted a physician for pains in his feet, which were diagnosed as due to fallen arches. These pains were very severe and necessitated treating his feet following a day's work. In 1918, he was honorably discharged from the army. Shortly after his discharge he developed pains in his back. In 1927, he had pains in his neck, head, back, legs, and hips. The pains were sharp at times and at times dull aching. In 1933, he reported to my office complaining of sharp pains in his back, neck, and hips, and also of frequent micturition. X-ray examination revealed decalcification of all bones, ankylosing spondyloarthritis involving lower spine, fusion of lumbosacral joints, and lumbar articulations with bridging across of the intervertebral discs. There was also ankylosis of the symphisis pubis and thinning of the cartilage of the left hip joint. His blood chemistry, May 17, 1933, showed calcium 11 mg. per 100 c.c., phosphorus 2.6 mg. per 100 c.c. This was a fairly normal blood calcium, but a low serum phosphorus. He was operated on May 18, 1934, by the late Dr. Max Ballin. No parathyroid pathology was found in the tissues removed, but both parathyroid arteries were ligated. Following the operation, this patient made an uneventful recovery with complete relief of his symptoms, and he is now back at work.

Case 3.—Mr. J. E., aged thirty-six, single, was admitted to the Evangelical Deaconess Hospital, April 12, 1933. The family history was negative. The past history revealed that he had smallpox and diphtheria in childhood. In 1918, he had gonorrhea complicated with epididymitis. In 1923, he had syphilis, which was successfully treated. He had a tonsilectomy and adenoidectomy in 1928. He had a fracture of the back in 1919 without undue violence. His present trouble started one year ago with pains in the neck, spine, and legs which became very severe. His most severe pain was in the cervical spine. This pain started at the neck and radiated up to the head. He was unable to turn his head for nine months. Physical examination was essentially negative with the exception of his spine and neck which were held extremely rigid. No masses were felt in the neck or over the spine. The lower extremities were very tender and painful. Laboratory examination revealed that the prostatic smear was negative for pus cells or gonococci. The spinal fluid showed 10 leukocytes per cmm., Gold test was negative, and Kahn and Wassermann were negative. His blood Kahn and Wassermann tests were also negative. His blood calcium was 14.2 mg. per 100 c.c. and blood phosphorous was 3.9 mg. per 100 c.c. X-ray examination showed fusions of second and third cervical vertebræ with extensive lifting and bridging of the articular surfaces of the fourth and fifth cervical vertebræ, narrowing of all intervertebral spaces, and demineralization of the vertebræ present. An operation was performed by Dr. E. C. Baumgarten. No parathyroid tissue was found. The vessels to left and right parathyroids were ligated. This patient has made an uneventful recovery with relief of pain within twenty-four hours. Recently I was informed by Dr. Baumgarten that this patient has since been married.

Conclusions

The treatment of hyperparathyroidism by surgical removal of one or two diseased parathyroid bodies or the ligation of the parathyroid arteries is followed by immediate relief of symptoms.

The investigation of the blood phosphorus is as important as the investigation of the blood calcium.

A high blood phosphorus with a low blood calcium will produce tetany. A high blood calcium with a low blood phosphorus will produce demineralization of bones.

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SOME INTERESTING AND UNUSUAL LESIONS OF THE ORAL MUCOUS MEMBRANE*

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Lesions of the mouth fail to receive their proper attention in most dermatologic literature and at most of our meetings. It has been my privilege during the past year or two to see a good many interesting lesions of the oral mucous membrane, largely through the kindness of Dr. Yeretsky, peridontist, and Dr. Northrop, oral surgeon.

Streptococcic hypertrophic gingivitis is a name for a group of cases characterized by the symptoms of an acute infectious disease, with the only evident area of infection limited to the gum tissue and marked by extensive hypertrophy. These cases have all given on culture a pure growth of streptococcus viridans. The following three cases are typical.

Case 1.—Miss L. H., aged twenty-seven, referred to the department of Oral Surgery, gave a history of an acute sore mouth and throat, beginning shortly after her teeth had been cleaned by her dentist six weeks ago. Following this, her gums became inflamed, sore, swollen, and tender. The soreness extended onto the mucous membrane of the mouth and hard palate. There was some elevation of temperature. Her dentist made a diagnosis of Vincent's angina and gave her some forty treatments including all the routine medication used in this disease, including one intravenous injection of neoarsphenamine with no great relief. Astringent mouth washes produced some temporary improvement, but a few days later there was a marked recurrence, and it was at this time that we saw her.

She presented bright red rolled soft gingival margins. This border was edematous and pushed up between and along the labial and lingual surfaces of all the incisor teeth, but occupied only the buccal surfaces of the molars. Between the teeth varying sized hypertrophic masses of gum tissues protruded. The larger masses were raised away from the crowns of the teeth in several spaces. No ulceration, erosion, pustules, or vesicles were seen. There was no membrane or purulent discharge. There was considerable salivation and the patient complained of a sticky secretion in the mouth, which was probably a serous exudate.

Complete physical examination was negative except for: the pulse, which was 84; the temperature, 99.2°; the above condition of the mouth and a chronic tonsillitis. The Kahn test was negative. The blood count showed normal white and differential counts with a red count of 3,860,000. The urine was negative.

Direct smears taken from the crest of the gums showed many cocci, a few long rods, and a few large spirochetes and spirilla.

Dark-field examination showed only rare coarse spirochetes.

Culture after seventy-two hours showed rare colonies Staphylococcus aureus, but the plate was largely covered by colonies of Streptococcus viridans. Cultures on Sabouraud's medium showed no fungus growth.

Treatment consisted of frequent washing of the mouth with saline solution. Mercurochrome 2 per cent, as advocated by Mead,[1] was first painted on and injected under the gums; later 1/500 solution metaphen was used. The results from this later treatment seemed to be better than the mercurochrome. Peroxide of hydrogen in dilute solution was used for a few days as a mouth wash. The hypertrophic tissue was touched up with a saturated solution of copper sulphate occasionally. Inside of one week the mouth was entirely well. There was a slight recurrence in the right cuspid area after two weeks which disappeared in three days when the above treatment was resumed.

Case 2.—T. W., female, aged three, became suddenly ill with diarrhea, fever, general malaise, and marked redness and swelling of the gums. The gums presented the same picture of hypertrophy, edema, redness without ulceration, membrane, or erosion as in the above case. There was some redness of the throat and tongue. Complete physical examination was negative except for the condition of the mouth, a pulse of 110, temperature of 101.2°.

The mouth was washed out with peroxide three times a day and the gums irrigated with metaphen; a saline mouth wash was used frequently. There was a rapid response and the mouth was entirely well in six days. There was no recurrence.

Case 3.—A. W., male, aged thirty-two, father of patient in Case 2, became suddenly ill four days after the onset of this condition in the daughter. He had diarrhea, headache, general malaise, fever and anorexia, followed in twenty-four hours by rapid hypertrophy of the gums, a sticky stringy saliva, and marked pain and tenderness of all gum tissue.

Fowler's solution as a mouth wash gave no results after two days and he was seen at this time. The condition of the mouth was identical with that of Case 2. General examination was negative except for the

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pulse rate of 94 and the temperature of 100°.

The treatment was the same as that in Case 2 except that cauterization of the hypertrophic tissue with saturated solution of copper sulphate, and 7 per cent chromic acid was tried, but seemed to make the condition worse, ultra-violet light applied through a quartz rod also gave no definite improvement. Salicylates and alkalies internally gave considerable relief from the toxic manifestations. The gums became normal in about ten days and there was no recurrence.

Discussion

Streptococcic hypertrophic gingivitis must surely be more common than one would expect from a review of the literature, in that we have seen these three cases within a period of three months. This group must be confused in most instances with the more chronic forms due to endocrine changes, trauma, or Vincent's infection.

The differential diagnosis should offer no difficulty when the major characteristics of this acute infection are kept in mind.

Hirschfeld[1] in an extensive article on hypertrophic gingivitis has given a review of the factors of malocclusion, torsion, crowns, et cetera, as an etiologic factor in the chronic cases. The case which he described as hypertrophy due to an atypical Vincent's infection might well have been a subacute streptococcic hypertrophic gingivitis since he makes no mention of loss of tissue which is usually characteristic of a Vincent's infection, and classified it thus because it cleared up under mild antiseptic medication, "with the rapidity characteristic of a Vincent's infection." It has been our experience that cases of streptococcic hypertrophic gingivitis respond in about one week, which is the usual period required in a Vincent's infection.

The differentiation from the chronic forms due to endocrine changes; mouth breathing, malocclusion, torsion, overhanging crowns, cavities, calculus and other irritating substances; scurvy, heavy metal poisonings, and leukemia is easily made on the history of an acute onset with the malaise, fever, et cetera, of an acute infection, the presence of the Streptococcus viridans in almost pure culture and the rapid response to gentle antiseptic medication. The more difficult differential diagnosis is the separation of streptococcic hypertrophic gingivitis from an acute Vincent's gingivitis. The hypertrophy, redness, malaise, fever, etc., may all be present in the Vincent's infection, but there is also usually ulceration, erosion or some loss of tissue along the gum margin.

Microscopic examination in the Vincent cases will show the usual numerous large spirochetes and fusiform bacilli, while in streptococcic hypertrophic gingivitis these are extremely rare, and culture will yield the characteristic organism, Streptococcus viridans.

Treatment besides the mild antiseptic medication as recommended should include after the acute symptoms have subsided a rigid oral prophylaxis and the elimination of all irritating factors such as abscessed teeth, irritating crowns, and fillings, the removal of partially impacted teeth, all of which may keep the resistance of the tissue lowered as well as retain the infective organisms which under proper conditions are apt to cause a recurrence of the infection or prevent a complete recovery. It is desirable that all other possible foci should be investigated and eliminated.

Strong antiseptic and caustic or stimulating medication such as copper sulphate, chromic acid, ultra-violet light, et cetera, which are frequently used in the Vincent's infection seem to be definitely contraindicated in the treatment of this condition since our cases became worse after their use. It is, therefore, our conclusion that we should attempt to prevent further damage by the organisms to the tissues and to destroy all possible organisms without damaging the resistance of the tissue, and that this should be by a conservative mild treatment. The internal medication of use in other acute infectious diseases seems to make the patient more comfortable and to shorten the course of the disease.

Since writing this paper we have seen two or three cases which were due to the hemolytic streptococcus which was not green producing, so that this condition can be produced by both the Streptococcus viridans and hemolytic streptococcus.

Another type of streptococcic lesion of the mouth is well illustrated by the two following cases.

Mr. W. W., aged forty, seen first with three large painful, superficially eroded, non-infiltrated,

patches of the buccal mucous membrane. These were covered by a white, or yellowish white, thin membrane which was easily wiped away. The surface beneath the membrane was raw and acutely inflamed. There were many fine hemorrhagic dots and vascular tufts seen over the base, and the surrounding mucous membrane was bright red.

Examination of the membrane and smears showed no fungi, fusiform bacilli or spirochetes but many cocci. Culture revealed a mixed growth of Streptococcus viridans and Staphylococcus aureus.

The condition responded promptly to 1/500 metaphen irrigations and saline mouth washes, but had progressed under anti-Vincent's treatment.

Miss S. M., aged thirty, was first seen with a painful, very superficial, eroded, non-infiltrated, patch of the mucous membrane back of the upper right third molar. This was diagnosed Vincent's infection and treatment instituted although spirochetes and fusiform bacilli were not found. The next day it had extended anteriorly along the gingival and buccal mucous membrane; more vigorous treatment caused no improvement and it had extended more widely on the third day with some swelling of the cheek. Smears and cultures at this time showed no fusiform bacilli or spirochetes but a growth of streptococci and staphylococci soon developed. A change to the treatment above caused the lesions to completely heal in three days.

The above cases illustrate lesions of the mouth which are as a rule diagnosed as Vincent's infection.

In our opinion the streptococcus is not considered sufficiently in the diagnosis of infectious lesions of the oral mucous membrane, and that more complete study of these cases will show that many which have been thrown into the "catch basket" of Vincent's infections, really have a streptococcic etiology.

Monilial infections of the mouth in adults are rarely seen and even by experienced men are often mistaken for carcinoma, leukoplakia, aphthous stomatitis, etc. The history of the following two cases is typical of these as we have seen them.

Mr. S. P. D., aged sixty-three, was referrred to us by Dr. Ferris Smith about one year ago. He presented greyish patches of membrane involving the buccal mucous membrane of the cheeks, extending well back toward the anterior pillars. Through this membrane were seen many pin head to pea sized aphthous-like erosions which were tender to the touch. The base on which this membrane rested was brightly erythematous with a surrounding inflammatory zone. The membrane was pulled away without great difficulty. It involved areas of the gingival sulcus, the gum edges, under the tongue, and hard palate. In some areas, particularly over the crest of the edentulous ridges, the membrane was quite hypertrophic.

This was first noticed as sore areas in the mouth twelve years ago, shortly after the teeth were extracted. It was quite sore at times, but there were periods when it bothered him very little. During the flare-up, there would frequently be some submaxillary gland enlargement and tenderness, with soreness of the neck and ears.

Regurgitation of sour material into the mouth occurred occasionally and this was usually followed by a period of reaction in the mouth.

He was seen nine years ago at the Mayo Clinic and a diagnosis of carcinoma was made at that time. Biopsy was taken and a cleanly healed scar is present. Flat radium plaques applied to the buccal mucous membrane caused a temporary improvement, but it recurred in three months.

A general physical examination was negative except for a senile pupillary arc and some tenderness over the gall-bladder region.

Fresh membrane was examined in 20 per cent sodium hydroxide solution and showed a few branching mycelia, many small fragments and spores. Methylene blue stain added nothing to the above findings. Culture on Sabouraud's medium developed a pure culture of Monilia Albicans. Biopsy of one of the hypertrophic areas shows leukoplakia and deep in the epithelium may be seen a few mycelia fragments.

We were familiar with the extreme resistance of this type of infection to treatment and the literature was carefully searched for new suggestions.

The various dyes were tried without improvement, x-ray gave no results, silver nitrate was recommended by some French observer and we have had fair results with it used in the form of the stick. Best results have been obtained by painting the area with Lugol's iodine twice a day and the cauterizing of the membrane with silver nitrate stick. Progress has been very slow, but he is much better now than at first. An acute attack seen a few days ago on the hard palate showed a diffuse erythema peppered with pin point sized dots of membrane.

Mr. E. P., aged thirty-six, presented a similar picture to the above, confined to the superior and inferior surfaces of the tip of the tongue. This had been present for two years, and a diagnosis of leukoplakia had been made by a competent dermatologist in Chicago. Because of the pearly white membrane under the tongue we felt that Monilia should be considered. Membrane examined in sodium hydroxide showed many mycelia and a pure culture of Monilia Albicans was grown.

Treatment with iodine and silver as above cleared up the subjective symptoms in two weeks, and the tongue was well to examination in one month.

The main points here in diagnosis are:

1. Inflammatory leukoplakic-like lesions frequently seen in areas where leukoplakia is not seen; i.e., under the tongue in gingival sulcus, et cetera.
2. Pearly white membrane, peels off fairly easily.
3. In the large patches may be seen small inflammatory erosions through the membrane.
4. Finding of mycelia by direct examination and culture.
5. Response to treatment.

Periadenitis mucosæ necrotica recurrens has been one of the rarer conditions of the mouth which has been very resistant to all forms of treatment. The results which we

have had in this case have been unusually good, and perhaps they may be of service to some in handling similar cases.

Miss H. S., aged twenty-one, seen first in July, 1932, presented several deep ulcers, the size of a split pea to that of a large bean, involving the right side of the soft palate, the tonsillar pillars, and the buccal mucous membrane. The ulcers had a brightly inflammatory border extending about 0.5 to 1 cm. and a bright hemorrhagic edge. They were filled with a dirty brownish-yellow necrotic material, which could be removed with difficulty. The base was brightly inflammatory and the vessels congested.

Thirty or forty smooth, very slightly contracted scars could be seen over the entire lingual and buccal surface. The tip of the uvula had sloughed away but it was now healed. The lesions first appeared at eleven years of age and continued to recur until the present time.

Any unusual mental effort, nervousness or worry would be followed by an attack of one or more new lesions. The attacks were not related to the menstrual periods and there had never been any lesions of the vulva or vagina. During the past year attacks have been so frequent that she has had hardly any period of complete freedom from lesions. The general health had always been good. General physical examination was entirely negative, the blood pressure 114 mm. of mercury systolic and 64 diastolic.

Following the suggestion of Perelstein[3] endocrine therapy was instituted. Whole pituitary was given by mouth and whole ovary by injection. Results were not satisfactory and calcium gluconate was added after six weeks. This seemed to help a little. She had had relief from neoarsphenamine given by another physician who considered these lesions to be luetic but they recurred shortly. We thought that perhaps it might be the arsenical effect and so started her on Fowler's solution in ascending doses, combined with the calcium. This gave immediate results and her mouth was well in three weeks.

She has been practically free of lesions now for nine months. On two occasions small ulcers have responded in one week to a resuming of the arsenic and calcium.

The patient has been, during the entire year, on a good general diet with cod-liver oil added during the winter. She has taught school for the first year, which was very tiring and made her nervous at times with only two mild recurrences as noted above.

The word epulis is used by the dental profession to mean a growth in the mouth, usually arising from the gums, roots of teeth, or jaw bones. I have seen the word used to describe so many lesions of the mouth that I began to investigate its proper use. Many pathological works, many dentists, and all available dermatologic texts, have been consulted with no adequate explanation; finally in Bunting's Oral Pathology, a brief classification was found and to our surprise it is used to refer to all benign and malignant growths of the gums, teeth, roots, and bone. Among the newer works, the term epulis is usually confined to the benign giant cell sarcoma. Classified as we understand the lesions on the skin, they represent and should properly be classified as: hemangioma, lymphangioma, fibroma, lipoma, pyogenic granuloma, other benign epithelial hyperplasia, epithelioma, and sarcoma. This inquiry was started following the case on which we made a diagnosis of pyogenic granuloma. There was so much confusion in the discussion of this case over the term epulis, that I felt a clear understanding of its "catch basket" meaning might be of value. In the modern pathological conception of disease, the term no longer has a place and should be dropped from the nomenclature. Pyogenic granuloma is usually seen on the skin, but it should also be kept in mind in the differential diagnosis of new growths in the mouth, as is illustrated by the following case.

Miss K. R., aged thirty, was seen about one year ago with an oval, reddish, spongy, mushroom-like tumor arising from the right lower first molar tooth socket, and pushed up between and away from the crowns of the first and second molars. The tumor was of the typical bright red pedunculated, cauliflower-like tumor characteristic of a pyogenic granuloma. Because of the possibility of a periosteal sarcoma, the oral surgeon felt that the tooth should be removed. This was done and the tumor came out with the tooth. Its pedicle base was attached to the root. The socket was kept clean and healing was uneventful.

The pathological examination showed a pyogenic granuloma.

Electrogalvanic burns of the oral mucous membrane due to dental appliances of different electric potentiality were called to the attention of the profession about a year ago by Dr. Lain.[2] We have had the privilege of seeing a very typical case lately.

Miss C. A., aged twenty-six, was seen about six months ago with a complaint of tender areas in the right cheek. On examination she presented along the ridge of occlusion on the right side a few minute erosions with brightly inflamed bases, and about these involving the central portion of the buccal mucous membrane was a thick cobweb of superficial scars or leukoplakic-like areas. The upper teeth were entirely filled with gold and the lower with amalgam fillings. She is going to have the amalgam replaced and we feel sure that it will relieve her entirely.

Note: Since this paper was written the amalgam fillings have been entirely replaced, and the patient has no longer any trouble.

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SICKLE-CELL ANEMIA: ETIOLOGY

With Report of a Case

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The sickle cell has been receiving increasing attention and study in the past decade. This is due to more clinicians becoming sickle-cell minded, rather than to an increased incidence. Herrick, in 1910, described sickle-cell anemia and established it as a definite clinical entity. Mason, in 1922, gave us the name "sickle-cell anemia." Cooley and Lee, in 1925, gave us the name "sicklemia" to designate the existence of the sickle cell in the otherwise apparently normal individual. Hahn used the term "sickle-cell trait" for this condition. Brandau offered the following classification according to the present knowledge of the subject:

I. Sickle-cell trait: healthy persons with sickling *in vitro*.
II. Sickle-cell anemia:
    1. Latent: healthy persons who are subject to recurring periods of active sickle-cell anemia.
    2. Active:
        a. Mild: slightly or moderately anemic patients with sickling *in vitro* or both *in vivo* and *in vitro*.
        b. Severe: Patients with severe grades of anemia with sickling *in vivo* and *in vitro*.

A discussion of sickle-cell anemia will not be taken up here. An exhaustive study of the literature on the sickle cell is being made and will be reported later.

The following case is reported because of its interesting blood and clinical findings.

Case Report

B. R., colored, male, aged twenty-one, born in Chattanooga, Tennessee, single, was first seen by me October 4, 1932. His complaint was sores on the right ankle.

Past History: Tonsillectomy and adenoidectomy was performed in April, 1925. Examination of the hospital record showed no blood study. Urine examination was done and recorded (included in laboratory data).

At fifteen years of age, he had pains and fluttering of heart. Since then he has had pain, fluttering, and skipped beats on exertion. He has frequent headaches. About three times a year he suffers severe headaches associated with vomiting. He has nocturia from two to three times a night. He has eneuresis at times. Otherwise past history is negative by systems.

Family History: His father disappeared shortly after he was born and has not been heard from since. His mother and sister are living and well. His sister is married and has a child five years of age. Examination of the blood of mother, sister, and her child show no evidence of the sickle-cell phenomenon. His mother knows nothing of his father's family.

Occupation: He has always worked as a shoe shiner and porter in a barber shop.

Present Illness: The patient states that as long as he can remember he has been weak, very thin, short of breath on exertion, and has always noticed that his scleræ were of a greenish hue. Since he was ten years of age he has had mild attacks of abdominal pains associated with joint pains. These attacks lasted for 3-4 days. In 1924 he had a severe attack of abdominal pain which was only relieved by morphine. He says that at this time he had pains in almost all the joints of the body. He was hospitalized for three weeks and discharged with a diagnosis of cardiac dilatation. Examination of hospital records shows no blood study. Urine examination was done and recorded (included in laboratory reports). Since then he has occasionally experienced mild abdominal pain associated with mild pain in one or two of the larger joints. In 1932 he had two sores on the medial aspect of the right ankle, associated with some swelling of the ankles after being up for some time. He was treated with ultraviolet light and ammoniated mercury ointment. The ulcers gradually healed in a few weeks. Examination of the clinic records where he was treated for the ulcers revealed no laboratory data except the blood Kahn test, which was reported negative. The sores for which he presented himself for treatment on October 4, 1932, had been present for four weeks and were progressively getting larger. These were very painful and associated with swelling of the ankles after being on his feet for any length of time. He also noticed increased weakness, dyspnea, and palpitation on exertion or climbing upstairs. He experienced mild abdominal distress at times with occasional pain in one or more joints, but never severe enough to seek relief.

Physical Examination: (October 4, 1932.) The patient was a young, tall, emaciated Negro, not appearing acutely ill or in any distress. He was 5 feet 10 inches in height, and weighed 100.2 pounds. His extremities were very long in proportion to his body. The skin was dry and intensely black. Although tall, he was of slight build, and his muscles were poorly developed. There was a generalized lymphadenopathy, the cervical, axillary, epitrochlear and inguinal nodes being palpable on both sides. The patient appeared somewhat younger than his stated age of twenty-one years, resembling more a youth of seventeen years. Mentally, the patient was bright, his mind being alert and active.

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His scalp was normal, covered by a thick growth of short kinky hair, although the beard was very scanty. The eyes protruded slightly, due to the emaciation. The pupils were equal and regular, with clearly defined edge. There were no masses, tenderness, or rigidity in the abdomen.

The extremities were long and emaciated, and showed poorly developed musculature. There was a

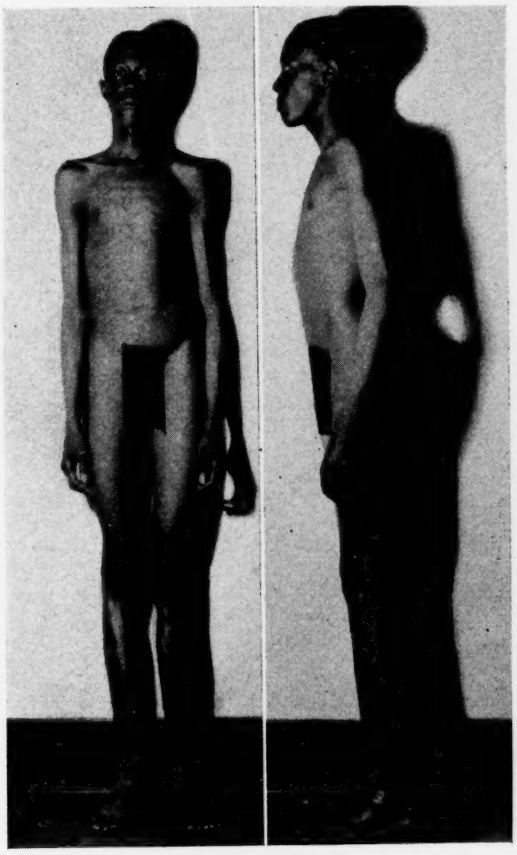

Fig. 1. Note the length of the extremities with their poor muscular development in proportion to the body, which is of slight build. The patient appears younger than stated age of twenty-one, although mentality is normal. The side view shows the projection of the upper abdomen due to the markedly enlarged liver. The ulceration and the varicosity of the left leg are plainly visible in the side view.

Fig. 2. The ulcerations of lateral aspect of the right leg. The smaller one is seen, although not in very good focus. The edema is shown by swelling above line of the bandage after removal. The skin is hard, wrinkled, and shows increased pigmentation around the ulcerations.

and reacted to light and in accommodation. The scleræ presented a peculiar greenish hue. The conjunctivæ were very pale. The ears and nose were essentially normal except for the pallor of the mucous membranes of the nose. The teeth were in fairly good condition, but poorly kept. The mucous membrane of the mouth and pharynx showed a distinct pallor. The tonsils had been removed.

The pulsations of the great vessels of the neck were distinctly visible and synchronous with the heart beat. There was no evidence of enlargement of the thyroid.

There was moderate scoliosis and kyphosis with resultant distortion of the chest. There was equal expansion of both sides. The lungs were hyperresonant. No râles were heard over both lung fields. There was a diffuse impulse which could be seen and felt over the cardiac area with each heart beat. The rate was 120 per minute. The blood pressure was 130 systolic and 65 diastolic. The heart was not enlarged to percussion. There were no murmurs audible.

The abdomen was enlarged and protruding in the upper right quadrant and mid-epigastrium, producing a flaring of the right costal margin. The liver dullness extended to a hand's breadth below the right costal margin. The liver was smooth

mild pitting edema of both ankles. There were two healed scars on the medial aspect of the right ankle. The lateral aspect presented two ulcerations. The larger one was 3 cm. in length and 1.5 cm. in width. It was oval in shape. The smaller one was round and 1 cm. in diameter. The ulcers appeared to be punched out with slightly rolled edges. The base was shallow, fairly clean with a mild amount of mucopurulent exudate, and having a white translucent appearance. There was no inflammatory reaction circumscribing the ulcerations. The skin around the ankle, and especially around the ulcerations and scars, was hard and wrinkled with a definite increase in pigmentation. There was a varicosity in the upper third of the left leg on its lateral aspect. The reflexes were present and normal.

The genito-urinary organs appeared normal. The pubic crines had a female distribution.

Laboratory examination in chronological order:

March 16, 1924: Urinalysis showed a specific gravity of 1.008, an acid reaction, a trace of albumin, a negative reaction for sugar, and numerous squamous epithelial cells in the sediment.

April 17, 1925: Urinalysis showed a specific gravity of 1.012, an acid reaction, a negative reaction for albumin and sugar, and no sediment.

March 21, 1931: Blood Kahn test showed a negative reaction.

October 4, 1932: Blood count: hemoglobin. 37 (Sahli); color index, .81; erythrocytes, 2,280,000; leukocytes, 12,900; polymorphonuclear neutrophils, 44 per cent; large mononuclears, 55 per cent; small mononuclears, 1 per cent; many poikilocytes; marked anisocytosis; sickle cells, 70 per cent in fresh preparation.

Urinalysis showed a dark amber color, specific gravity of 1.012, an acid reaction, a negative reaction for sugar, and a one plus reaction for albumin.

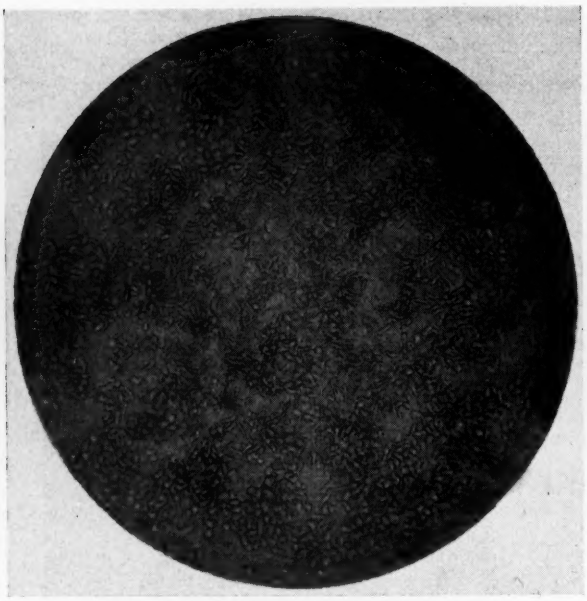

Fig. 3. Microphotograph of sealed preparation of blood after seven days. Note the large number of pencil and sickle-shaped cells. (Specimen of blood taken October 18, 1932.)

October 11, 1932: The blood Kahn test was reported negative. Examination of the blood showed: sugar 102.0 mg.; Van den Berg reaction was negative for the direct and positive for the indirect; icteric index, 33.4; coagulation time, three minutes; bleeding time, three and one-half minutes; cholesterol, 151.6 mg.; calcium, 9.2 mg.; inorganic phosphates, 5.43 mg. The glucose tolerance test with 100 gm. of dextrose given with lemon gave the following results: fasting, 85.8 mg.; one-half hour after dextrose, 143.8 mg.; two hours after dextrose, 118.4 mg.; three hours after dextrose, 81.0 mg.; urine, reaction for sugar was negative during this period. The phenolsulphonphthalein test of kidney function was reported: first hour, 60 per cent; second hour, 7.5 per cent; with a total of 67.5 per cent.

October 17, 1932: The patient was seen by Drs. Cooley and Lee in consultation, and the following is the report of the blood study made by Dr. Lee: "The colored boy whom you brought to the hospital on Monday had a very interesting blood picture. Our findings were as follows: fresh preparation, about 80 per cent showed immediate sickling of a very extreme form. After twenty-four hours, approximately 95 per cent were sickled. Blood count: hemoglobin, 90 per cent (13 gm. of hgb. per 100 c.c. blood); erythrocytes, 2,050,000; leukocytes, 11,700; polymorphonuclear neutrophils, 44 per cent; large lymphocytes, 16 per cent; small lymphocytes, 36 per cent; myelocytes, 4 per cent; anisocytosis, moderate; poikilocytosis, marked; there were many pencil shaped and sickle shaped cells on the smear; polychromatophilia, moderate; reticulated erythrocytes, 10 per cent; slight irregular achromia. This boy's red cell picture is rather unusual for a sickle-cell anemia in several respects: (1) there are no nucleated red cells, (2) the hemoglobin is unusually high for the red count, (3) a few pencil shaped cells are usually seen on the fixed smear, but the large number found here (approximately 40 per cent) is very rare, (4) the cells are well filled with hemoglobin, which, of course, explains the high color index. However, the typical red cell of sickle anemia shows a rather marked 'irregular achromia.'"

October 27, 1932: Because of the marked difference in hemoglobin reported, this was checked, and found to be 45 per cent.

November 3, 1932: Hemoglobin, 60 per cent; erythrocytes, 2,470,000; sickle cells approximately 50 per cent in the fresh preparation.

December 13, 1932: Roentgenograms taken were reported as follows: lateral view of the skull shows no changes or thickening or other evidence of the type usually seen in blood dyscrasia.

The long bones show some slight accentuation of the linear markings near the joint ends.

The pelvis shows no changes.

The spine of the lumbar vertebra is slightly decalcified. The sacrum also appears slightly decalcified, but the pelvis is of normal density. Some of the markings of the pelvis are slightly increased, similar to that of the long bones.

December 30, 1932: The patient was again seen by Dr. Lee and the following is her blood report at this time: "hemoglobin, 70 per cent (Sahli); or 10.1 gm.; erythrocytes, 2,170,000; leukocytes, 15,400; polymorphonuclear neutrophils, 50 per cent; large lymphocytes, 18 per cent; small lymphocytes, 30 per cent; eosinophiles, 2 per cent; polychromatophilia, marked; reticulated erythrocytes, 20 per cent; marked anisocytosis and poikilocytosis; achromia, slight and irregular; platelets, 250,000. About 50 per cent of pencil shaped cells were seen on the stained smear.

November 13, 1933: Hemoglobin, 59 per cent;

CHART I. SERIES OF BLOOD STUDIES BY DR. LEE. NO RESPONSE TO JECULIN.

Date	Hgb.	R.B.C. millions	W.B.C. thousands	P	LL	SL	B	E	Misc.	Polychromatophilia	Anisocytosis	Poikilocytosis	Ret. R.B.C.	Achromia	Platelets thousands	
10-24-32	13.0	2.05	11.7	44	16	36	0	0	NM_4	Mod.	Mod.	Marked	10.	Slight	300	I
12-29-32	10.1	2.17	15.4	50	18	30	0	2		Marked	Marked	Marked	20.	Slight	250	II
1- 9-33	10.1	2.38	9.0	52	18	24	0	2	N_2LM_2	Marked	Marked	Marked	15.	Slight	300	
1-23-33	11.0	2.22	9.4	38	8	36	0	4	N_2HH_2	Marked	Marked	Marked	20.	Slight	300	
2- 6-33	11.0	2.60	11.3	46	26	21	1	3	N_1HH_2	Marked	Mod.	Marked	30.	Slight	250	
2-20-33	10.5	2.20	12.0	54	16	24	0	4		Marked	Marked	Marked	20.	None	200	III
3-13-33	10.0	1.99	9.0	46	8	40	0	6		Marked	Marked	Marked	20.	Slight	200	

N=Normoblast .NM=Neutrophilic Myelocyte HH=Hemohistioblast LM=Large Mono.

I. Fresh preparation—80 per cent extreme sickling within five minutes. Stained smear shows about 40 per cent pencil shaped and sickle shaped cells. The slight achromia is irregular in type.
II. Treatment with jeculin (Upjohn) instituted, two tablespoons four times a day.
III. Jeculin discontinued.

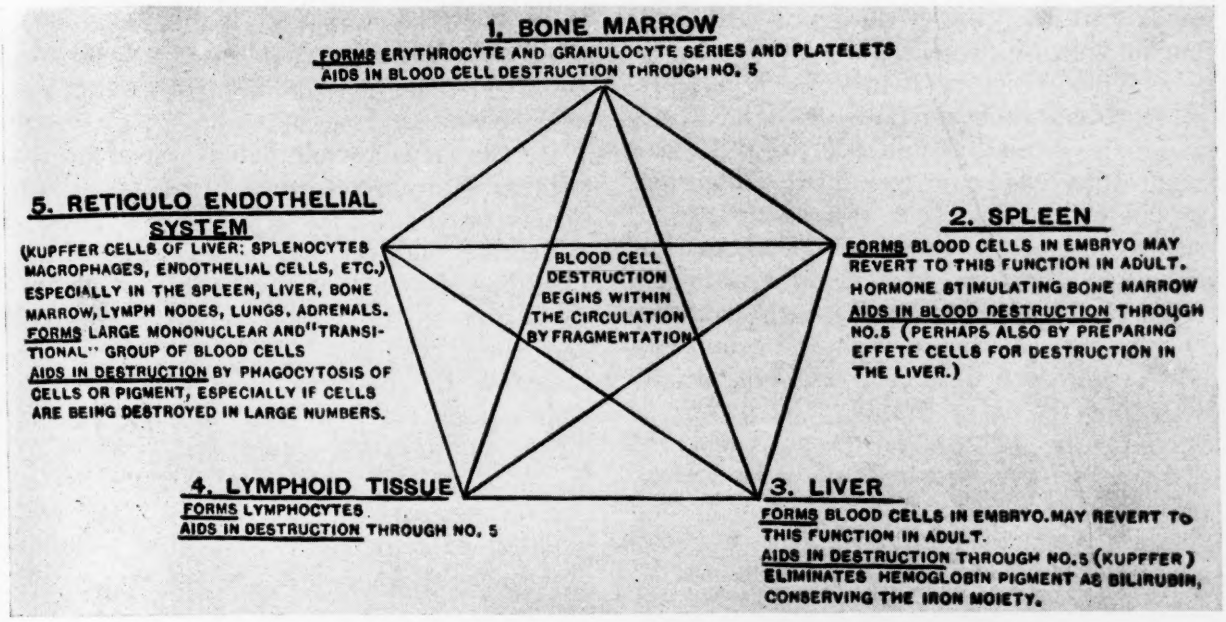

Fig. 4. Hemolytopoietic system. After Krumbhaar, E. B.: Am. Jour. Med. Sci., 166:329, 1923.

erythrocytes, 2,462,000; leukocytes, 12,100; color index, 1.2.

Treatment and Progress: The patient has been seen at frequent intervals and various forms of therapy have been tried. The ulcerations on the right leg slowly and gradually healed with periods of some retrogression. Following the healing of these ulcers after an interval of one month, there appeared a small ulceration on the lateral aspect of the left leg. The ulceration on the left leg gradually increased in size to almost that of the larger ulceration on the right leg and then slowly healed and at the present time shows a contracted healed scar with a crust over it.

The various forms of local therapy for the ulcerations instituted were wet boric acid dressings, Una's zinc plaster, tincture of merthiolate, thymol iodide, alcohol and iodine, ammoniated mercury ointment, and ultra-violet therapy. These forms of therapy appeared to have no effect on the course of the ulcer. The healing of the ulcer only occurred when the patient was forced to remain off his feet to reduce the edema and improve the circulation.

The systemic treatment was carried out with the various forms of therapies for anemia, but after prolonged studies with each one, there appeared to be no beneficial effects obtained as determined by blood studies. There was little or no change in the blood picture while under any one preparation for anemia (Chart I). He was treated with reduced iron, liver extract, Ventriculin and Jeculin. Blood studies made while under no medication showed the same results.

He was treated, in addition to the local therapy for the ulcerations and the various preparations for the anemia, by rest in bed, a high caloric anemia diet, forcing of fluids, vitamins, protection against infection of the respiratory system by clothing, etc., and mild stimulating exercises.

At the present time his condition and blood picture are the same as when first seen. His weight now is 110 pounds.

Comment

It is interesting to note that the patient had been hospitalized twice and received

Fig. 5. Microphotograph of moist preparation taken November 14, 1933, showing characteristic bizarre and pointed forms.

treatment at a clinic without a single blood count having been taken. On two of these three occasions, he presented himself with symptoms of sickle-cell anemia and no attempt was made to determine their etiology! A plea is made here for the routine blood count of every patient presenting himself to the physician for care. The blood count would reveal the anemia, and in this case the sickle cells, and lead to further investigation. Sickle-cell anemia would not be so rare if clinicians became "sickle-cell" minded and made routine moist preparations of blood in all cases of unexplained hemolytic anemias.

An interesting feature of the adolescent and adult sickle-cell anemia patient is the increased length of the extremities in pro-

portion to the body. This sign is well borne out in the case presented here (Fig. 1).

The blood picture of this case report presents several unusual findings. The hemoglobin is unusually high for the red count due to the cells being well filled with hemoglobin (Chart I). The typical red cell of sickle-cell anemia shows a rather marked irregular achromia. The blood smears and fresh blood preparations show approximately fifty per cent of pencil shaped cells (Fig. 3). A few pencil shaped cells are usually seen, but the large number found here is very rare. There were no nucleated red blood cells found in all the studies made except on one occasion when one was found. There are usually a large number of nucleated red blood cells seen as evidence of their increased regeneration.

Theory of Etiology

A study of the literature reveals many facts which can be correlated.

Sickle-cell anemia occurs in the Negro race. There are only two undisputed cases reported in the white race. The case of Cooley and Lee is in a Greek child. Rosenfeld's case is in an Italian. The other cases reported are eliminated as authentic cases of white people because of inconclusive evidence to eliminate the admixture of Negro blood or to conclusively establish the cells as sickle cells and not the "corps en demilune" of the French. The native Greek and Italian have moderately pigmented skins. This, then, would lead us to say that sickle-cell anemia occurs only in the moderately or highly pigmented skin races. What relation, then, has the pigmented skin to the sickle cell?

The morbid anatomy of sickle-cell anemia lies in the liver, bone marrow, spleen and lymph nodes. The liver shows an enormous increase in number and size of the Kupffer cells, laden with varying amounts of ingested sickle cells and pigmented granules. The polygonal cells exhibit a heavy deposit of amorphous brown pigment. The spleen shows marked congestion, enlarged malpighian follicles with some endothelial hyperplasia. The lymph glands show general hyperplasia distended with large mononuclears, plasma cells, lymphocytes, and pigment-laden macrophages. The bone marrow is rich in nucleated cells and shows hyperplasia, numerous erythroblastic and leukoblastic islands, large numbers of polymorphonuclear neutrophils, eosinophils, pigment-laden macrophages, and megalokaryocytes.

By the reticulo-endothelial system or apparatus is meant the widespread cells of reticular or endothelial origin which possess a definite and marked phagocytic ability. Jaffé has shown that they are functionally significant as the Kuffer cells of the liver and the pulp cells (splenocytes) of the spleen in the endothelium of spleen, lymph nodes, bone marrow, and adrenal, and in the reticulum of the spleen, lymph nodes of the bone marrow, etc., and a steadily accumulating mass of evidence is forcing recognition of a definitely indicated assumption that the bone marrow, spleen, lymph nodes, liver, and the whole reticulo-endothelial apparatus must be considered as definite a mechanism for the control of the cellular elements of the blood as the digestive or endocrine systems are in their respective spheres. Krumbhaar has indicated in Figure 4 the interlocking relation of the various factors concerned in the formation, destruction, and regeneration of the blood.

The decrease in number of red blood cells and the increased excretion of urobilin are generally considered evidence of blood destruction, which is thought to result chiefly from the activity of the reticulo-endothelial system in the spleen, hemolymph-nodes, bone marrow, and liver (Peabody and Broun), or from fragmentation (Rous).

A study of the morbid anatomy of sickle-cell anemia reveals to us a hyperplasia or over-activity of the cells of the reticulo-endothelial system. We can then assume that this pathologically increased activity of the reticulo-endothelial system is responsible for the hemolytic anemia, and in some way affects the morphology of the red blood cell, producing the sickle cell.

Since the reticulo-endothelial system plays a big part in pigment metabolism, it is reasonable to assume that if there did occur any pathology to this system, it would occur in those individuals in whom there is a demand for increased pigment metabolism, namely, the Negro and the moderately pigmented skin races.

With the correlation of the above facts and their logical association, we are led to present the theory that sickle-cell anemia has its etiology in the reticulo-endothelial

system. Whether this etiology lies primarily in the abnormal function of the reticulo-endothelial system or whether it is secondary to some other factor, we are unable to say.

Summary

1. An interesting case of sickle-cell anemia is presented here.

2. The blood picture is interesting because of the high color index, the large number of pencil shaped cells, and the absence of nucleated red cells.

3. In sickle-cell anemia patients who reach adolescent or adult life, a significant sign is the long extremities in relation to the body.

4. A thought is presented here for consideration. The reticulo-endothelial system is primarily or secondarily the etiological factor in the production of sickle-cell anemia.

Appreciation is expressed to Dr. Pearl Lee for her kind assistance and blood studies which are herein recorded.

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SPECIFIC DIAGNOSIS AND TREATMENT OF ALLERGIC DISEASES OF SKIN: PRESENT STATUS

Arthur F. Coca, Pearl River, N. Y., states that the formulation of the problems of allergy, as well as the practical diagnosis and treatment of allergic diseases, requires the tentative classification of these conditions. In atopic eczema the excitants are antigens, *i.e.,* produce antibodies (reagins), whereas in contact dermatitis they are nonantigens; *i.e.,* no antibodies can be demonstrated. The skin test in the inherited atopic eczema is made with aqueous extracts with the scratch method or by intracutaneous injection, whereas that in contact dermatitis is best made with an original raw material by surface contact (the patch test). This original material, if it is a fluid, may have to be diluted. It is not necessary to use an extract of the solid materials. One has no choice in the selection of the technic of skin testing in these two categories, because the patch test with aqueous extracts regularly results negatively in the familial allergies while the intracutaneous and scratch tests are often negative with the extracts in contact dermatitis. In the case of the vegetable oils, the treatment of contact dermatitis by desensitization, when avoidance is impossible, is usually successful; this stands in marked contrast to the experience, up to the present time, in the similar treatment of contact dermatitis due to excitants other than the vegetable oils. In atopic eczema due to a food, on the other hand, the results of injections have been disappointing. In order to test and treat intelligently these conditions, the physician must first determine, if possible, to which group his patient belongs. The specific diagnosis and treatment of atopic eczema has been in many cases disappointing. However, this experience is not different from that commonly encountered in the study of bronchial asthma and to some extent also in hay fever subjects. Instances have been reported that suggest, like some cases of bronchial asthma, that atopic eczema may sometimes be of infectious origin and not due to a sensitivity to a specific excitant mediated by reagins. Again atopic eczema may sometimes be due to specific sensitivity to inhaled substances. Practical handling of a certain number of cases of contact dermatitis from plants and of the allergic manifestations of fungous infections has been improved through two different influences. The diagnosis of contact dermatitis has been facilitated by the recent greater employment of Jadassohn's surface or patch test, and the proper manner of applying specific treatment of this condition has been indicated through the demonstration that the excitant of contact dermatitis in ragweed pollen is not the antigenic atopen that excites hay fever but an oily substance. This oil has since been found to be as abundant in the ragweed leaf as it is in the pollen. The weekly intramuscular injection of 0.5 c.c. of a 1 per cent solution of the extracted oily substance dissolved in sterile almond oil has in a number of cases brought quick healing, and protection on subsequent natural exposure. The second suggestion is that of Sulzberger, who points out that the allergic excitant of Monilia (Oidium) is specifically different from that of the trichophyton group and has materially broadened the range of effectiveness of the desensitization treatment of some cases of obstinate fungous infection, for which there seems to be no other means of relief.—(*Journal A. M. A.*, Oct. 27, 1934.)

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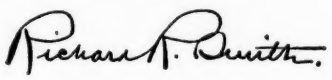
JUNE, 1935

EDITORIAL

POST-GRADUATE MEDICINE

The profession may well look with satisfaction upon the advancement being made in post-graduate medicine in this state. The movement initiated by our society soon after the war, and fostered and approved by it since then, is now offering unprecedented opportunities for definite and real improvement in our education. A number of years ago we asked the University to assume the leadership and direction of this program. A department of Post-Graduate Medicine was instituted with Dr. James D. Bruce in charge, who accepted the responsibility with the understanding that the State Society and the Detroit College of Medicine (now Wayne University) coöperate and lend their wholehearted support. We thus have had the three organizations working to the same purpose and the results have been little short of astonishing. Today we are offered such opportunities in education that scarcely would have been thought possible a few years ago. And best of all the response to these offerings has been more than we could have hoped for. The attendance at the courses has already reached large proportions and the enthusiasm is real and very great.

With the State University and Wayne University turning out graduates that are better prepared, and with the post-graduate opportunities that are being offered and accepted, things indeed look bright for the future of medical practice in Michigan. It means better service to the public, greater satisfaction to the doctor, and an increased respect for our profession. There is no royal road to success in medicine. Character and a determination to serve well are, of course, essential, but in addition we must have modern knowledge of our science and the ability to apply it. With these we may attain that joy of living which is the natural reward to men who are performing well, essential and difficult service.



President, Michigan State Medical Society.

FEVER THERAPY

Treatment of certain disease conditions by means of elevation of the temperature of the body or some portion of the body is not entirely new. In 1918, Wagner-Jauregg noticed that tabetic patients who had contracted malaria were either cured or improved so far as their neuro-syphilis was concerned. His observation led to the inoculation of such patients with the plasmodium of malaria so that since this time the malaria treatment of general paresis has become a settled practice particularly in institutions. Fever therapy is based on the principle that certain micro-organisms have a thermal lethal point which is low enough so that raising the body above this temperature will not injure the body tissues. The induction of malaria produces certain discomforts besides those produced by the elevation of temperature. Various mechanical devices in the way of apparatus have been tried for the purpose of elevating the body temperature from without. The temperature produced by malaria results from the reaction of the tissues to the disease itself.

Among the conditions that have been treated by fever therapy, in addition to syphilis, are gonorrhea and chronic infectious arthritis. Satisfactory results are being reported in gonorrheal infections and complications which include prostatitis, salpingitis, and periurethritis as well as cervicitis and urethritis. Research workers have found that ninety-nine per cent of the gonococci can be killed *in vitro* in five hours at a temperature of 105.8° F.; in the treat-

ment of patients a temperature of 106° to 107° F. was used for periods of five to eight hours. In chronic infectious arthritis a temperature of 104° to 105° F. was maintained over a period of five hours with a course of three to six treatments.

An apparatus designed by Mr. Charles Kettering of General Motors fame is being used in a number of hospitals, particularly in hospitals connected with medical schools. We might add that from the very cumbersome nature of the apparatus fever treatment will be institutional rather than a form of therapy that can be carried out satisfactorily in the office of a physician. The Kettering apparatus known as the air-conditioned hypertherm consists of a large insulated horizontal chamber in which the patient is completely inclosed except the head. The patient lies comfortably on a pneumatic mattress and can shift his position at will within this chamber. Adequate provision is made for the regulation of temperature and humidity. Nicety of control is one of the distinctive features of the apparatus. The treatment is given by specially trained nurse technicians under the supervision of physicians. There are certain contra-indications which we will not mention here. The subject of fever therapy is being handled cautiously by competent clinicians who are equally cautious in their claims. This is as it should be.

We shall await with interest the published results of this, which bids to be a successful method of treatment in properly selected cases.

MEDICAL ECONOMICS

Political Economy and Economics have been called the dismal sciences. We sometimes wonder how scientific they really are. Economics has been defined as "the science that investigates the conditions and laws affecting the production, distribution, and consumption of wealth or the material means of satisfying human desires" (the latest edition of Webster). It is not science in the same sense as the physical sciences, physics and chemistry, inasmuch as viewpoint plays an important part, namely whether the attitude is that of the rugged individualist, the *laissez faire* type found in Adam Smith of Wealth of Nations fame or in Robert Owen, the founder of socialism, or all viewpoints in between. The social sciences so-called are to a large extent textbook sciences inasmuch as it is nearly impossible to create laboratory conditions for social experiment. Perhaps in our criticism of economic theory, we have in mind the economics of yesterday. The theory changes to fit the facts and popular attitude towards them. The change in economic outlook may be taken as evidence that economics concerns living things rather than phenomena of inanimate nature.

Medical Economics is a comparatively recent term, born since the war, really assuming importance during the depression years. Under the title Economic Problems of Medicine,* Dr. A. C. Christie of Washington, D. C., has produced a small volume of 230 pages in which he has discussed almost every phase of the subject as it pertains to medicine. Ethics, economics and sociology, according to Christie, are so closely interrelated under conditions that prevail in modern life that they cannot be separated in a discussion of any one of them. Accordingly he prefaces the subject with a chapter on Medical Ethics in relation to Medical Economics. The chapter is full of good advice on the subject of the physician's duty to his patient, to his fellow practitioner, to his family and to himself.

The United States has seventy-seven approved medical colleges and Canada ten graduating approximately five thousand new doctors every year. The number of new graduates licensed in excess of the death rate of those already in practice is between sixteen hundred and eighteen hundred. There is at present one physician to seven hundred and eighty of a population. The conclusion of the commission on medical education is that adequate medical service could be rendered by twenty-five thousand fewer physicians than we have at present, which would mean the ratio of one to twelve hundred population. One method to control the output of medical graduates is to limit the admissions to medical colleges and to exercise greater caution in granting licenses to graduates of the few remaining unapproved medical schools. The control of entrants to the medical profession is one of the medical socio-economic problems.

*ECONOMIC PROBLEMS OF MEDICINE. By A. C. Christie, M.S., M.D. Professor of Clinical Radiology, Georgetown University Medical School; President, Fifth International Congress of Radiology; Formerly President of the Medical Society of the District of Columbia, The American Roentgen Ray Society, The American College of Radiology, and Member of the Committee on the Costs of Medical Care. New York, The MacMillan Company, 1935.

The development of medical science and the advances in medical education during the past quarter of a century, while productive of results that have been almost revolutionary in a good sense, have not been without their sinister side. The training the physician has received has made him dependent upon the hospital, the modern x-ray and clinical laboratory and the electrocardiograph; as a consequence of which training, there has been a tendency to locate in large cities where such things are easily accessible. To quote the author, "It is quite generally agreed that the emphasis in medical education must be so placed that good clinicians will be produced, men who are able to deal adequately with the eighty or ninety per cent of illnesses for which they are consulted which require no special facilities beyond those possessed by a well trained general practitioner."

Many plans of medical service which have been worked out by County Medical Societies are presented; among them is described the Wayne County plan of deferred payments for medical, surgical and hospital care to employed persons and their families. The author realizes that a problem so complicated as that of medical care broad as society itself, is not readily fitted into any one plan. From the very nature of the subject the detail solution rests with county medical societies which are closest to the work to be accomplished. State and National Medical Societies can assist with the broader aspects. We have, therefore, a strong argument for an alert, virile county society.

Among the other problems discussed are the physician and the hospital, the relation of the physician to medical organizations, medical care under workingmen's compensation laws, health insurance, industrial medicine, contact practice, health insurance as a solution to the problem of medical care. All these subjects are of a more or less controversial character. Members of the profession cannot help but feel somewhat strongly where their means of livelihood is at stake. However, Christie's whole attitude shows none of the emotional bias that occasionally characterizes such discussions. He has had exceptional opportunities for the study he has undertaken, in the fact that he was a member of the Committee on the Costs of Medical Care.

THE VALUE OF GOOD WILL

Some of the changes that have taken place in medical practice during the past twenty-five years have been extremely desirable. Every physician has welcomed that due to preventive medicine. No person nor institution has been a greater factor in bringing it about than he himself. He looks upon it as one of his triumphs even though it has meant that such diseases as typhoid and diphtheria are removed from the scope of his service.

Within the time mentioned, all over the United States, have been enacted Workingmen's Compensation Laws whereby the employer is made responsible for accidents to persons employed by him. The idea is reasonable since persons so incapacitated might become public charges. The employer exercised the usual prerogative in case of risk, namely, insurance with one of the numerous companies that have sprung up for the purpose. The insurance companies almost immediately began to interfere with the time honored right and privilege of the injured workman to employ the doctor of his choice. This has also interfered to a large extent with physicians' legitimate field of practice. One would think that in a complex society where everyone is to a certain extent dependent upon everyone else, the industrialist would spread his accident work among the entire medical profession or those willing and competent to undertake it. The act would not only promote a feeling of good will between physician and industry, it would help the physician to purchase the products of industry. In other words, it would be fair play. In the case of public service corporations, the physician has no alternative but to use their service, telephone, electricity, gas, and yet almost an army of employes is taken out of his practice and their medical requirements in the way of service met by other hired employes of the companies, or corporations. In other words, large sections of medical practice are being controlled by laymen.

There seems no good reason why accidents arising out of industry could not be cared for adequately by the physician in general practice. If he is qualified to set a fracture or to reduce a dislocation for the wife and daughter in domestic life, surely he is qualified to perform the same service

for the husband and son in the factory. In fact, factory or shop accidents are only about fifty per cent of the accidents that take place in homes. According to the National Safety Council, thirty-three thousand deaths resulted from accidents in homes in 1934, as compared with 15,500 fatalities in occupations. Accidents in homes were set at 4,800,000 as compared with 1,350,000 in industry. Accidents in homes were caused for the most part by falling, due to poorly lighted stairways and cellars, as well as contact with electrical and other appliances in the home.

Most industrial surgery is simple surgery. Much of it comes under the category of minor surgery. It differs from other forms of surgery in the fact that the injury is already before one, awaiting the necessary operations to facilitate repair. In general surgery the operator must first produce an "injury" before he can gain access to the organ in which the pathology is located; many of these operations require a supertechnic as well as diagnostic judgment of a high order. This statement is not to be understood to minimize the importance of the treatment of injuries. If, however, the general practitioner is competent to perform this service for the non-industrial population, the part of the family who is not gainfully employed, he is surely competent to render similar service to employed persons.

It would seem a matter of sound policy if the various industries would seek the good will of the medical profession as a whole by insisting that all industrial accidents be treated by physicians willing to undertake it. The only provision should be competency to do the work and a disposition *to play fair with both the patient and the company.* This does not mean that insurance companies necessarily abolish their medical departments. The injured workman should be free to make use of them if it is his desire as he should be free also to consult any licensed and qualified physician of his choice.

If health insurance should become the order of the day, and should come under lay control, it does not take much imagination to anticipate what would become of a large portion of the medical profession so far as this means of livelihood is concerned.

A POPULAR PROFESSION

The State Board number (April 27th) of the Journal of the American Medical Association reports that the files of the Association of American Medical Colleges contain nearly one hundred thousand records of applications made during the years 1932 to 1934, inclusive, for the study of medicine. So eager were a number of these applicants whose pre-medical education had been found deficient, that they have gone abroad to European schools. Remarkable is the fact that seventy-nine of them who were denied admission to American medical schools have enrolled in an extra-mural medical school in Glasgow, Scotland. We do not know what extra-mural medical schools are; evidently they teach medicine by correspondence. It may be that this group of nearly four score do not look forward to practicing medicine. If not, then the fact of their extra-mural study is of no consequence to any but themselves. It is reasonable that one might pursue a course in law without any thought of practice; as a liberal education, a degree from a law school is as good as a degree in liberal arts. The same is true of engineering. Medicine, however, is in a different category. The demands upon one's time and resources, financial and other, are so great that we cannot imagine one entering upon a study of medicine who does not look forward to a medical career.

All medical schools are deluged with applications notwithstanding the fact that, according to the commission on medical education, there are already twenty-five per cent too many men engaged in medical practice in this country. In spite of judicious selection of applicants, ten to fifteen per cent of those accepted failed in their first year. Many physicians who are consulted by aspirants to the medicine are wont to discourage them. Advice should be given with discrimination. Many persons seek medicine or nursing through a desire to be of service to the sick. The willingness to be of service is seen in the attitude of the laity who go out of their way to pass on advice or remedies from which they feel they have received benefit. Where one finds that altruistic urge combined with superior intelligence and mental ability, the young medical aspirant should be encouraged, if he is financially able to meet the cost of medical education.

A MOMENT OF MEDICAL HISTORY

W. T. D.

MICROSCOPICAL TECHNIC

To acquire its present status, microscopy has advanced through four stages of development, and, in its progress, the field of microscopical study is as much indebted to technical methods for the preparation of material as it is to the optical properties of the microscope itself. In the period before achromatic lenses, the microscope, as an instrument, was inferior, and the technical methods which accompanied its use were simple. This was the pioneer stage of microscopy. The second period extended from the introduction of the achromatic microscope to the development of successful methods of sectioning and staining tissues. The third stage involved the standardization of sectioning and staining technics during and subsequent to the latter quarter of the nineteenth century. Finally, a fourth stage may be said to coincide with the discovery of methods for studying living tissues.

The pioneer microscopists of the seventeenth and eighteenth centuries, using simple lenses or compound microscopes of low magnifying power, were confronted on every side with convenient objects for study: leaves, parts of flowers, crystals and other inorganic substances, hairs, scrapings of tissues, small insects and minute aquatic forms. Ordinarily, these objects were simply placed before the lenses and studied without preparation. The difficult problems for the microscopist were those of acquiring sufficient light for his preparations and of finding methods for holding and adjusting objects in front of the lenses. The preparation of the object was thus secondary to the more important problem. Most early studies were concerned merely with the surface appearance of objects viewed by reflected light. With the use of transmitted light early in the eighteenth century, however, more profound observations were permitted.

Microscopists studied their specimens in an aqueous medium or as dry preparations. Fluids were placed in small glass tubes, between glass plates or in small concavities ground into glass plates. Sections of tissues, after excision with a razor, were studied immediately on removal or after a period of hours or days of drying. Robert Hooke developed a technic of compressing tissues between two glass plates for study.

Though methods were simple, they frequently required extreme skill. Fine dissections of insects and other small forms by Swammerdam and Malpighi, as well as injected preparations, represented the most intricate phases of microscopic work. Some of Swammerdam's demonstrations were treated with alcohol or turpentine, but other agents do not seem to have been used. Various chemicals came into use during the later eighteenth and early nineteenth centuries: acids for the decalcification of bone, alkalis for the maceration of tissue elements, and chemicals, such as acetic acid, which changed the optical properties of tissue.

With the introduction of the achromatic microscope in the third quarter of the nineteenth century came a tremendous acceleration in the activity of microscopists. The old technics of teasing, maceration and compressing tissues were developed to their utmost. Of the newer technics devised, the most significant were the introduction of fluid media in which specimens could be studied, the development of technics for preserving tissues by chemicals and the perfecting of devices for sectioning tissues.

In the earlier period, fresh tissues were studied in water or, more rarely, in salt solutions or albuminous media. Dried tissues were studied as they were. These two types of preparations were known as "moist" or as "hard." Sometime during the early nineteenth century, glycerine came into use as an alternate medium for moist preparations, and, in a short time, it became, because of its refractive properties, the most widely used medium for microscopic material. Specimens were included in a concavity on a glass slide with a quantity of glycerine or were put into a shallow cell mounted on a slide. A cover slip of thin glass or mica was sealed in place with wax or varnish. Other mounting media were gelatine, sugar solutions and gum arabic. Combinations of glycerine and gelatine (glycerine jelly) and glycerine and

gum arabic (Farrant's solution) were common.

Hard or dried material received other treatment. Such specimens were ordinarily covered with varnish or resins, such as copal and damar. Canada balsam was used as early as 1832 for this purpose. Although Lockhart Clarke (1851) devised a technic for treating moist nerve tissues with absolute alcohol, then turpentine and, finally, mounting the tissue in balsam, this technic did not come into general use for more than twenty years. The two methods, balsam for hard material and glycerine for moist, remained standard until nearly 1800.

The development of conserving fluids was a still more important advance during the early nineteenth century. In 1839, Goadby introduced his "universal" preserving fluid for microscopic work. It consisted essentially of a very dilute solution (1 per 10,000) of mercuric sublimate. Other workers varied the amount of mercury and added various reagents, such as alum, salt and glycerine. Within thirty years, many other agents came into use, such as creosote, carbolic acid, camphor and dilute alcohol. Numerous salt solutions, such as calcium chloride, potassium carbonate and sodium sulphate, were likewise tried. The most important salts with conserving properties, however, were chromic acid (1840, Hannover), potassium dichromate (in Müller's fluid, about 1850) and osmic acid (1866, Max Schultze).

Such salts as the above came to be prized not only for their conserving properties, but also for their effect in hardening tissues. It was found that tissues which were subjected to such hardening agents could be handled with little danger of distorting tissue elements. This was particularly important in the cutting of thin sections. Without hardening, tissues crumpled or tore. Other hardening and preserving solutions were picric acid (late 1860's), platinum chloride (1870) and saturated mercuric sublimate (1878).

Sectioning, the third significant advance in microtechnic before the last quarter of the nineteenth century, is, to a great extent, tied up with the use of hardening agents. From the early period of microscopy, investigators shaved sections from chunks of animal and plant tissues. Woody tissues were routinely subjected to the technic and cartilaginous and horny substances were equally well adapted to sectioning. The yielding character of most animal tissues, however, limited the technic to a minor field of use. An outstanding example of the simple hand sectioning of tissues is represented by von Baer's studies of embryo-anatomy.

Various instruments were developed to facilitate the cutting of tissues, and, of these, the Valentine knife was most important. This instrument, which was shaped like tweezers, had two flattened parallel blades sharpened to a razor edge. By a screw adjustment on the handle, the space between the two blades could be controlled to a minute degree. To make a section, the double-bladed knife was plunged into or drawn across the tissue, a thin section remaining between the blades. A section so obtained, when floated on a slide with water or glycerine, could then be studied.

Another device used occasionally was the "section cutting machine." This instrument in its hand and table forms was adapted to holding a tissue while sections could be cut by hand with a razor. Though section cutting machines were frequently used by botanists, they were usually unsatisfactory for animal tissues. The procedure of hardening tissues by chemicals during the mid-nineteenth century, however, extended the range of the section cutting machine. Commonly, an animal tissue after hardening was surrounded by elder pitch or was placed in a hollow between slices of raw carrot or potato. The vegetable tissue supported the preparations and allowed better sections to be made. During the 1850's, molten paraffin was poured around the tissue, so that on solidifying, it supported the material for sectioning. Glue and gelatine mixtures, gum arabic and mixtures of wax and oil were likewise used. The technic of surrounding tissues for sectioning made section cutting machines more practical, and a hand device known as the Ranvier microtome came into extensive use. This device was essentially the same as those of the preceding hundred years. Along with the Ranvier instrument, other embedding media came into use during the 1870's. There were transparent soap, mixtures of paraffin and spermaceti, and celloidin (Schiefferdecker, 1876, and Duval, 1879). It was at this same period that the freezing microtome came into use.

The earlier models of this instrument consisted of a Ranvier type of instrument surrounded by a freezing chamber for salt and ice. Tissues could thus be frozen in an ice matrix for sectioning. About 1890, compressed carbonic gas came into use as a material for freezing tissues.

The third great period of microscopy coincided with the development of the basic knowledge on tissue and cell structure, embryology, bacteriology and cell pathology. Essentially modern methods of study began to appear at this time, beginning about 1870.

In 1868, the Rivet microtome appeared in France as the antecedent of modern microtomes. Unlike the earlier devices for sectioning, this machine was characterized by three important factors: a device for holding and orienting embedded tissue, a holder maintaining in position a microtome knife and an inclined plane mechanism for raising the tissue a measured amount. The instrument was made of wood. In 1870, a modification of the Rivet microtome appeared in Germany as the Leyser microtome, an instrument made of metal. This was soon followed by other models, such as the Jung and Thoma types. During the 1870's and early 1880's, many varieties of microtomes came into use, and, in a number of these, the inclined plane method of raising the object was supplanted by a screw mechanism. The automatic wheel or rotary microtome appeared in 1886 as the invention of G. Ballzer, the instrument maker of Carl Ludwig. This instrument was subsequently improved by Spalteholtz, William His and Charles Minot. In contrast to the Rivet or sliding type of microtome, the knife was held rigidly and the object moved across the knife by a mechanism driven by a wheel or crank. With this instrument, paraffin sections adhered to one another to produce a continuous ribbon. In 1896, Minot introduced the automatic precision microtome with which sections of even and exact thickness could be produced. All modern microtomes are modifications of the Rivet, rotary or precision types.

The progress of sectioning methods was as much dependent upon improved embedding methods as upon the microtome. So-called interstitial embedding came to supplant the procedure of simply surrounding tissues in a homogeneous solid. In this method, all the interstices of a tissue as well as the interior of cells were infiltrated with embedding material. In order to infiltrate tissues with paraffin or waxy materials, the water had to be replaced by a fluid medium miscible with wax. In 1881, Giesbricht introduced a technic of soaking a tissue in absolute alcohol in order to remove the water. The tissue was then immersed for a time in chloroform and finally infiltrated with melted paraffin. When the paraffin had penetrated all parts of the tissue, it was cooled and the permeated tissue was sectioned without distortion. Simultaneously, Schiefferdecker developed methods of infiltrating with celloidin. Tissues subjected to interstitial embedding were free from water and could be mounted in Canada balsam. The old method of mounting moist preparations in glycerine was thus superseded.

With interstitial embedding, the necessity for hardening tissues largely disappeared. The hardening effect of chemicals became secondary to their effect in conserving tissue and cell details accurately. It became the desideratum of microscopists to preserve or "fix" all details in a life-like character with a minimum of distortion. Those agents used for hardening tissues proved also to be the best substances for fixing tissues. The seven most used agents were: solutions of acetic acid, potassium dichromate, alcohol, mercuric sublimate, chromic acid, picric acid and osmic acid. To these was added formalin in 1893. By 1880, it was found that mixtures of chemicals made better fixatives than simple agents alone. Of the hundreds of combinations made by various workers, probably the most important of those which are still used are the solutions of Flemming (1882), Carnoy (1887), Hermann (1889), Tellyesnicky (1889), Zenker (1894), Gilson (1895) and Bouin (1897). In addition to the simple immersion of tissues in fixing fluids, the technic of injecting fluids into the blood vessels came into use (Golgi, 1886, and later, Mann).

The final important advance of the period under discussion concerned the staining of tissues. Though the method somewhat preceded the development of efficient sectioning technics, its most important period coincided with the microtome.*

*The history of biological stains has already been considered in an earlier article of this series. Jour. Mich. State Med. Soc., Vol. 33, No. 1.

During the last quarter of the nineteenth century, the various technics mentioned above were consolidated into a routine procedure for microscopic work, and methods of today differ in no essential way from those of that period. Many slight modifications of technic were specifically adapted to one tissue or another, but the procedure consisted of the steps previously discussed, namely, fixing, dehydrating, embedding, sectioning, staining and mounting.

The most modern attitude in microscopical research is characterized by supplementing preparations of dead and preserved tissues by studies on living cells in various physiological conditions.

Protozoa, bacteria and other living organisms have been studied with the microscope for many years, but the isolation of living tissues has been more recent. Leo Loeb attempted this in 1897 on several tissues. The *in vitro* culture of tissues arose more properly, however, with the experiments of Ross G. Harrison on living cells in 1907. He developed media in which nerve cells not only survived, but grew and developed. This demanded aseptic technic, a favorable nutrient medium and a suitable substratum, such as a lymph clot to which the cells could adhere.

Burrows and Carrel in 1910 developed the technic and showed its general application to various tissues. Since these studies, tissue culture methods have provided a means for studying living cells apart from the animal body under any power microscope.

In 1907, M. A. Barbour devised a pipette mechanism of sufficient delicacy to handle individual bacteria, and, in 1911, he showed that it was possible to inject bacteria into individual cells and to dissect the cells as well. The next year, Kite and Chambers performed microdissections on the cell membrane and nucleus, even dissecting out individual chromosomes. The latter worker, in particular, has done much in the past twenty years with the dissection of living cells and tissue cultures.

Some very recent developments in microscopy have concerned the study of living cells as they are intact in the living body. Special microscopes, known as the ultropaque type, have been devised for this purpose. A strong cone of light is brought to a focus deep within a tissue where it illuminates cells below the surface of the tissues. In another recent method, intense illumination with a minimum of heat is brought to the tissue by means of a quartz rod. High power objectives with long working distance bring the deep cells into focus.

A CASE HISTORY

Peter Piper—plumber, whose age is forty-six,
Is admitted into "Judas" under Dr. Herbert Hicks.
He suffers in a manner truly horrible—Alack!
From giddiness and headache and pains all down his back.

'Twas on a Monday morning right early in the year,
That patient (on completing a nine days' course of beer)
Was wakened in the small hours by a curious "rustling" sound,
And noticed that a hundred snakes were wriggling on the ground.
He seized a handy bottle, and he thinks he slew a score,
Then the floor sprang up and hit him, and he wot of nothing more.
Since then (Oh most reluctantly) he's stayed away from work,
Though not from laziness, of course, or any wish to shirk.
But (as one will admit) it is impossible to plumb—
To mend the bath and find the leak from where the drippings come
When suffering as Peter Piper (plumber) does—Alack!
From giddiness and headache, and "pains all down his back."

Past History

Born of poor but honest parents, in a somewhat lowly state
Patient passed a peaceful boyhood, but had measles when aged eight.

Family History

A cousin of his mother's had her colon out at Guy's,
His father, skilled at skittle, once obtained a second prize.
His uncle was a fireman and wore a copper hat,
But there's hardly any clinical significance in that.

Condition on Admission

A nasty looking fellow,
Not at all a pleasant sight.
His skin's a horrid yellow,
But his nose—well p'rap's you're right.
His eyes a beastly colour,
But react to L. and A.
His tongue is rather duller,
But most similar to clay.
His heart and lungs and liver
All have known more prosperous times,
His "murmurs" make one shiver
(Hyperbole but rhymes).

Local Condition

In a pleasant situation with an aspect facing south,
Is a small, hard, rounded swelling at the angle of his mouth—
Moves freely on palpation and is tepid to the touch;
There's music on percussion, and it does not hurt him much.

Consultation Report

Then there gathered learned doctors, and they all examined P——,
And the first to speak was Dr. Henry Hetherington Lee;
He thought that the appendix ought to really bear the blame
And, where he asked for treatment, would advise removing same.
This awakened Dr. Waterbury Watchet from his doze,
His face expressed amazement, and he said he must suppose
That his senior was joking, for the treatment made him smile;
The case was one for vaccines. Then up rose Dr. Lyle,
And diagnosed Cirrhosis. Last there followed Dr. Head,
Who disagreed with everything that everybody said.

Operation Note

Operation—a "Pan-Viscerectomy"
Performed by Sir Mulberry Tree;
The patient being rendered unconscious
by the fumes of $CHCl_3$.
He was laid in the dorsal position,
A fearful incision was made,
And continued till all the grim contents
Of the patient's inside were displayed.
The margins of wound were retracted
And firmly held thus by a slave.
The liver and guts were resected,
(The spleen they decided to save).
Then the peritoneum was sutured,
The muscles were brought into place
With pieces of string, and the skin was
Secured with a stout leather lace.
Then the surgeon addressed all the dressers
And wished they would learn to behave.
The H. S. he declared was a dotard,
While the ligature man was a knave.
Next a pad was applied and a bandage,
A "many-tailed" one it is said,
And in care of a nurse and two porters
The patient returned to bed.

Diagnosis (made in another department)

Broncho-pneumonia, secondary anemia,
Peritonitis, and bad septicemia.

—From *Round the Fountain.**

*This humorous poem is from a small volume of two hundred pages made up of bits of prose and verse by students, past and not so far in the past, of St. Bartholomew's Hospital, London. The profits from the sale of the book are to be devoted to a fund for a nurses' home. If the reader likes the sample, the little volume "Round the Fountain," may be obtained through the agency of his local book dealer.

NOISE AND EFFICIENCY

(Emil Amberg, M.D.)

Harold R. Berlin stated at a luncheon-lecture before 1,000 members and guests at the Producers' Council Club of New York, as follows:

"Noise may be regarded as 'any undesired sound'; something which detracts the attention from a task or play. The engineering term called the 'decibel' was illustrated when the 1,000 persons in the auditorium were asked to shout as loudly as possible, at a given signal. An enlarged view of a 'noise-meter' or 'noise thermometer' on the lecture platform registered 110 decibels, just 10 short of the 120 decibel mark arbitrarily set by engineers as the limit of loudness of a sound that the human ear can endure continually without pain.

"The harm which noise does to the human mechanism is by no means a matter of guess work," said Mr. Berlin. "Medical study has shown that noise impairs the digestive functions by affecting the flow of saliva and gastric juice. It is by no means accidental, therefore, that we seek instinctively a quiet place in which to work, eat, rest or play."

He pointed out that tests conducted in the Department of Psychology at Colgate University showed that a "typist used 19 per cent more energy when working under noisy conditions" and "lost more than 42 per cent in speed." Tests made in telephone central control rooms and department stores, he added, indicated that reductions in the number of errors up to more than 40 per cent could be effected by modern sound-absorbing construction and treatment of walls."

The philosopher Schopenhauer said "On Noise": "Occasionally it happens that some slight but constant noise continues to bother and distract me for a time before I become distinctly conscious of it. All I feel is a steady increase in the labor of thinking—just as though I were trying to walk with a weight on my foot. At last I find out what it is."

The hard of hearing and the deaf people are in the fortunate position not to be affected by outside noises. Consequently their efficiency is greater. We wonder when the office-managers of business houses and other concerns will become acquainted with the fact that the earhandicapped can concentrate better and do more efficient work. "Efficiency" is one of the passwords of the time. We hope that employment offices will draw the proper conclusions from the facts mentioned before. It will be to the advantage of business concerns.—From *The Rainbow.*

THE KING'S ENGLISH

Counsel: Now sir, did you, or did you not on the date in question, or at any time previously or subsequently, say or even intimate to the defendant or anyone else, whether friend or mere acquaintance, or in fact a stranger, that the statement imputed to you, whether just or unjust and denied by the plaintiff, was a matter of no moment or otherwise? Answer, did you or did you not?"

Defendant: "Did I or did I not what?"

—*Exchange.*

I paid a hundred dollars for that dog. He's part collie and part bull!

Which part is bull?

That part about the hundred dollars.

—ANON.

DEPARTMENT OF SOCIETY ACTIVITY

Edited by The Secretary

MEDICAL EDUCATION AND PRACTICE*

DR. JAMES D. BRUCE: I am going to take but a few moments, for there is already too little time left for general discussion. I want to assure you that the University is happy to have you here today, and to emphasize the fact that this is *your* University. Those of us employed here are interpreting as best we can educational programs and policies for the benefit of our student body and the people of the State generally. From time to time, various groups come here to present their problems, and following these representations we frequently find various innovations are made in our policy. I think when the history of Dr. Ruthven's administration is written that the outstanding contribution of this period will prove to have been his willingness and his readiness to meet with the various groups in the State for the solution of problems that affect them in one way or another. And this, too, without sacrifice to prestige or scholarship.

Our profession has ample evidence of this coöperative spirit. Eight years ago, when the doctors, after trying for several years to develop a plan of postgraduate education among themselves—I should say "ourselves" because I was engaged in practice then and a member of the Council of the State Society—found that our best efforts were not reaching our objectives satisfactorily and that we needed academic direction, we presented our needs to the University, and the University accepted the responsibility for the direction of continuing education in Medicine. For years, in Commencement addresses we were admonished that we were simply beginning to study medicine when we graduated, but no one outside of our group assumed any responsibility for this direction except organizations, some of which were of high quality, but were both too expensive and distant to meet the needs of the average family doctor. We knew perfectly well that new techniques and procedures were constantly being developed and that it was impossible from the reading of the text or a paper, or listening to a lecture, to get an understanding which safely permitted practical application. We felt we needed this assistance, and so represented our needs to University authorities. And that is the reason that the University undertook the direction of this work.

Only a few days ago a gentleman from one of our neighboring universities spent the day with me to learn what we were doing in undergraduate medicine and with the problem of postgraduate education. He said that his faculty had been urging him for a considerable time to undertake a program of continuing education in medicine but that he had been loath to initiate it for the reason that in so many schools and groups the movement had grown for a short period, then gradually languished and died. That has been the history of postgraduate education the country over, with very few exceptions.

Some five or six years ago, Dr. Jennings —not our own beloved Dr. Jennings of Detroit, but the secretary of the Brooklyn County Medical Society—made a report on the work of that Society. This had been one of the finest postgraduate programs ever developed in the country, but the enthusiasm had begun to wane. In reviewing its status after it had been in operation four or five years, Dr. Jennings gave four important reasons for the loss of enthusiasm and effectiveness of the program.

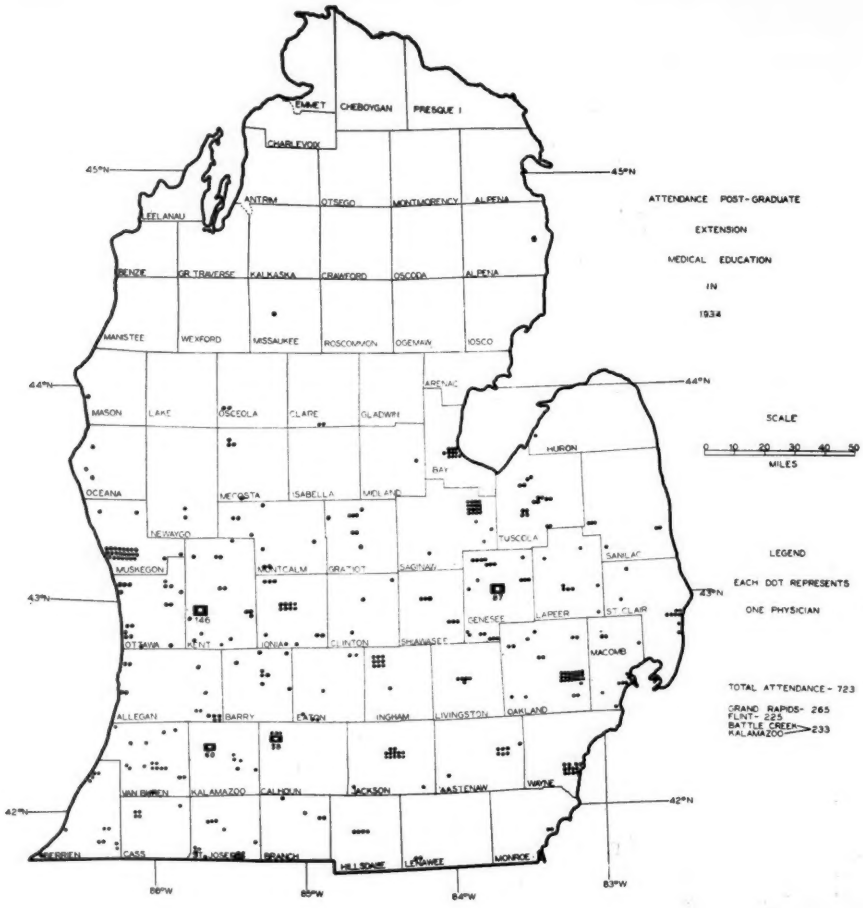
The *first* reason was that the medical schools of the community had not taken the problem seriously and had not interested themselves in helping in the movement. The *second* reason was that the large hospitals of the community had not coöperated and had not seemed to sense their responsibility and their opportunity in the movement. The *third* reason was the apathy of the profession. The *fourth* was the lack of direction by the group which had instituted the movement. Those were all very cogent reasons.

*Address by Dr. James D. Bruce, Vice President, University of Michigan, delivered at the Annual Conference of County Secretaries at Ann Arbor, March 27, 1935.

In Michigan we have been fortunate. The need for an educational program was emphasized by the State profession over a period of eight or ten years. Our problems were thoughtfully presented to the University. Even upon the acceptance of the responsibility by the University, we did not begin the development of the work immediately but organized a committee to study plans for another year—a committee which represented the University, the Wayne University College of Medicine, and the profession. At the end of the year we decided upon a program and a policy, and upon the basis of that we have been operating since.

Six years ago we started in Detroit and in Ann Arbor with a composite program of one month, and for two years we continued that program. There were about forty doctors in attendance the first year, and the second year about fifty.

At the end of that time we reviewed our program, which was patterned largely after the four to six weeks composite courses long in vogue. We took it apart, and we found that there was a great deal of padding or filler in it; that certain essential subjects were not being given the attention they should be given. So we divided, rather empirically, the whole field of practice into eight parts and made up a series of programs of one week each. The following year we offered these eight intensive courses, with the result that from then on there has been a rapid increase in attendance and greater satisfaction in our teaching staff.

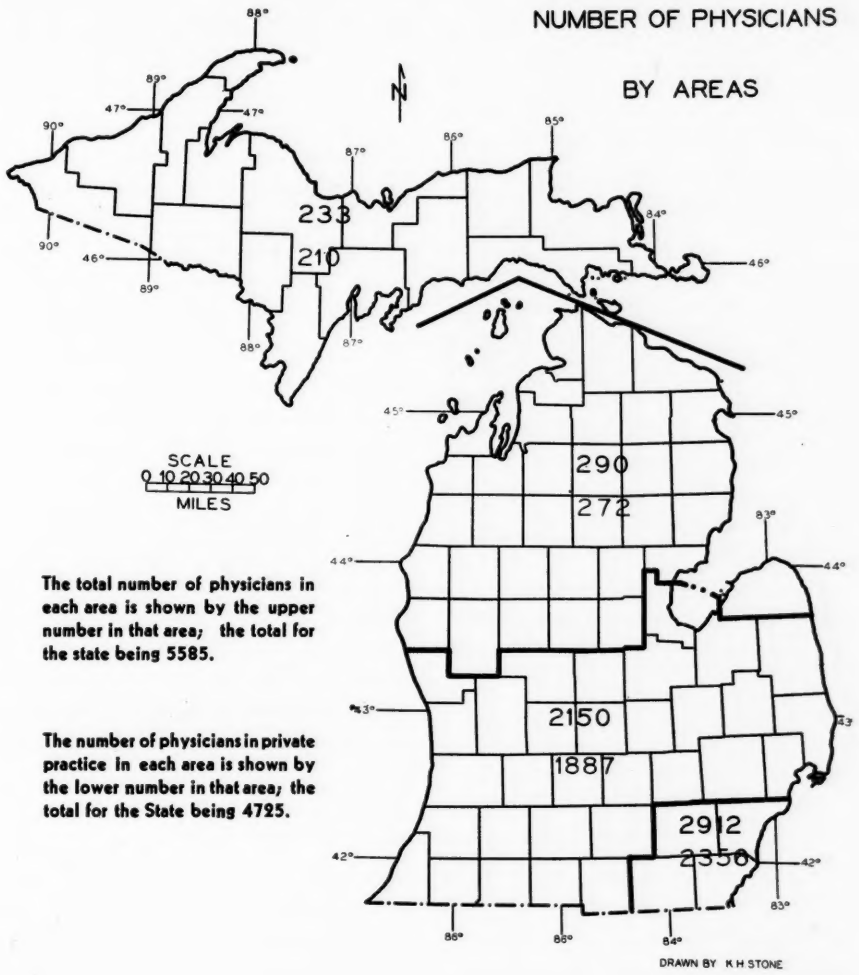


The attendance has increased from 40 in the first year to 377 in the fifth year. However, we have in the State of Michigan 5,585 doctors. Of these, 4,725 are in active practice, and with 377 doctors in training we were not touching the fringes of our objective. So, the question was how to bring the work more intimately to the practitioner, and to that end we tried another experiment. We opened last year, as many of you know, a center in Flint, in Grand Rapids, and in Battle Creek-Kalamazoo, jointly.

I should like you to observe the distribution here (indicating on map).* There were

*The number of attending physicians is represented by dots in three colors. Flint in red; Grand Rapids in black; and Battle Creek-Kalamazoo in blue.

87 doctors from Flint and 138 from the surrounding country. Note the distances that these doctors came. They are peppered all over this area—Port Huron on the east, Mt. Clemens, Pontiac, and all the smaller towns of this district.



In Battle Creek, there were 58 from the city itself; in Kalamazoo, there were 69, and 106 from the surrounding country, many coming from the extreme southwestern portion of the State.

In Grand Rapids, we had 146 local registrations and 119 from the surrounding towns, many driving from 50 to 150 miles.

Looking over the map, you see an intermingling of colors occasionally. That is due to a doctor missing a day in the town in which he is registered and making up his attendance in another center. The dots are not duplicated but credits are balanced between the three centers.

We had a total attendance of 796 in this course—723 members of the State Medical Society and about 60 non-members—more than double the number in our intensive courses of the preceding year. As a result of this extension we have had a very spontaneous response. Over three hundred letters have been received from doctors who attended these courses, commending them and asking that they be continued; and from the northern districts of the State there have been innumerable requests to extend the work into these districts.

We have in mind establishing another center at Bay City. While this will draw some from the Flint district, it will also permit our reaching a considerable territory, both northeast and northwest of Bay City. We contemplate also a center at Traverse City, Cadillac, and Manistee; *i.e.*, we will alternate in these cities. Alpena and Petoskey might be considered for the northeastern part. We have had a teaching and consultation center in pediatrics at Marquette for five years and are now discussing further development in this more distant area with the local profession.

Looking over this map, in four counties in this corner—Wayne, Washtenaw, Monroe, and Lenawee—there are 2,912 physicians. Of these, 2,350 are in active practice in this comparatively small area. If we draw a line from Muskegon to Bay City, excluding these four counties, we have 1,887 in active practice. So you see there are 1,887 plus 2,350, or 4,237, out of our total of 4,725 in active practice, which leaves only 272 doctors in the entire northern district, from here to Mackinac City, and in the Upper Peninsula (which is shown on the other map) 210 practising physicians at the present time.

Much more might be said on this subject but I do wish to emphasize particularly that we believe this program is a success because all of the agencies that should be interested are interested. Our two great teaching institutions, the University Medical School and the Wayne University School of Medicine, our large hospitals, and the profession are mutually concerned, so that with this combination there is no question about the future of a continuous program of medical teaching in Michigan.

Our problem, then, is to develop ways and means to maintain annual courses in our new centers, to extend similar opportunities to our 482 members in the northern portion of the State, as well as to maintain and possibly amplify our present Ann Arbor and Detroit courses. With this accomplished, I have reason to believe the problem of continuing education of the family doctor will be solved.

Our program has not left out of consideration the continued training of the specialist, and although various national studies seem to show that the specialist is already over-represented, we feel that no program of medical education is complete without provision for adequate training in this field. To a limited extent, graduate training has been operating effectively in the University Medical School and plans are now under way for the extension of these opportunities, but they are not sufficiently matured to warrant detailed discussion at this time.

Country Constable: "Pardon, miss, but swimming is not allowed in this lake."

City Flapper: "Why didn't you tell me before I undressed?"

Constable: "Well, there ain't no law against undressin'."

—*Exchange.*

A.M.A. CONFERENCE ON COUNTY PLANS

On April 27, there was held at the A. M. A. Headquarters in Chicago a conference collaborated in by representatives of County Societies the country over under whose direction plans of one sort and another had been conceived and put in motion to solve one or more phases of medical economic problems in that community. Representatives were present from at least 16 states of the Union and the agenda included presentation of plans of almost every conceivable type.

It is not possible here even to summarize the implications of the many plans presented but a simple classification might be made as follows:

1. Plans for the care of indigents.
2. Pre-payment plans (insurance).
3. Post-payment plans (collection devices).

Dr. Tuck was present by special invitation to present the plan in use in Oakland County, which was recognized as one originally set up and continued in successful operation largely because of the close coöperation given by the Oakland County Medical Society although all funds and administrative responsibility come from FERA and SERA. Dr. Tuck made a forceful yet conservative presentation and aroused considerable interest, particularly among certain representatives from States which had been unable to arrive at any such satisfactory working arrangement with their own state and local governments. There is no question but that the medical profession at large is vitally interested in accomplishments in Oakland County, and the relatively unsatisfactory plans set up elsewhere can be explained largely on the basis of local political situations and lack of qualified leadership, especially on the part of emergency relief officials but also within the profession.

Dr. Spickard, of Seattle, Washington, presented a plan called "King County Medical Service Corporation" which came into being to combat the vicious aspects of private contract practice in that state. The King County program shows unmistakably the power of a local medical association to control the type of medical practice in its own community, since, during the nearly two years of operation of this plan, private contract practice has practically disappeared

in the face of the competition afforded by the unified profession. It was found that private contracts could not be abolished legally and the Medical Society was forced into the insurance business as the only way out of a rapidly growing and deplorable situation.

Under this plan the patient and physician alike have free choice; there has been no attempt to formulate or regiment medical practice; the administrative cost is only 5.2 per cent. But to this must be added 5 per cent as the cost of salesmanship involved in getting the contracts; this item, it is expected, will shortly be abolished; 20.8 per cent went to hospitals and 52.0 per cent plus was paid to professional members for services rendered. Fees paid varied between 50 cents and $1.15 per unit (dollar) of service rendered. No other plan presented could even approximate these figures. Four-fifths of the physicians in the community participate in the plan.

One of the most ambitious undertaking is that recently devised and set in motion in Washington, D. C. This plan was presented by Dr. Prentiss Willson, President of the District of Columbia Medical Society, and by Mr. Ross Garrett. The plan has been in operation only three months and obviously it is too soon to measure its effectiveness. However, it is noteworthy that the profession in Washington, D. C., already so completely controls medical services in its own community that its "Central Admitting Bureau" passes upon every applicant for care at any free clinic within the District. The allocation of community chest funds for hospitals and clinics is controlled; patients where income is inadequate to care for illness of a "catastrophic" magnitude but who have some earning capacity are cared for after investigation by a "Medical Dental Service Bureau." A post-payment installment plan is tailored to fit the patient's income. Physicians may refer patients to this Bureau for completion of financial arrangements before service is actually rendered but in so doing may occasionally find considerable variation in the estimate of the patient's ability to pay.

The District of Columbia plan, like the King County plan, demonstrates the power of an aroused and organized profession to control any and all phases of medical practice in that community. It is to be hoped that in the exercise of this newly found power the profession will maintain its dignity and continuance to be worthy of high esteem in the operation of these enforced business expedients as it has for its professional accomplishments.

—C. T. EKELUND, M.D.

DR. TUCK'S IMPRESSIONS OF CHICAGO CONFERENCE

We had a very interesting time at the conference held in Chicago. The bureau of Medical Economics of the A. M. A. called this meeting of representatives from all sections of the country to hear from them about various plans in use by county medical societies for the collection of fees for medical service. All the plans described at the meeting dealt with pre-payment or post-payment of fees by patients in the low income group.

The Oakland county program was the only one in which welfare medical care was considered, which proved somewhat of a surprise to us. We thought that we would hear many various plans described but apparently other states have been slow in taking advantage of privileges offered by the Welfare Administration or have been unable to get coöperation from the Administrators in the different counties. It seemed to us that no uniform interpretation of FERA No. 7 has been made, hence the lack of anything resembling our program as we know it. We perhaps expected too much and consequently came away somewhat disappointed. However, we were assured by the editor of the A. M. A., Dr. Morris Fishbein, that something constructive would come from this meeting and would be presented before the House of Delegates in the Atlantic City convention. We feel that the medical profession of this country has a great deal to gain by having some positive leadership asserted by the A. M. A. at this time. Should this leadership fail or falter the physicians of this country stand to lose millions of dollars they justly deserve. We cannot help but feel that could the rank and file be heard from emphatically enough they would endorse a uniform program for the care of these people.

We hope that we are mistaken in our

impression of the attitude of the officers at A. M. A. headquarters and will be very much pleased to learn that something constructive will emerge from the coming convention in June.

It has always seemed to us that we as medical men have been slow in presenting our views in regard to such programs as these. We wonder what the leaders of other groups such as the American Federation of Labor, etc., would do in similar circumstances. With an appropriation of $880,000,000 to care for the needs of Welfare clients the medical men of this country should receive at least 6% of that amount or $52,800,000 for work they have done for nothing in the past. For this reason we expect to hear of some definite program advocated by the leaders of the A. M. A.

—R. G. TUCK, M. D.

MINUTES OF THE MEETING OF THE EXECUTIVE COMMITTEE OF THE COUNCIL

The Executive Committee of the Council convened in Flint, Michigan at 6:30, Thursday, May 16, 1935. Present, Chairman Powers, President Smith, President-Elect Penberthy, Vice Speaker Reeder, Doctors Carstens, Heavenrich, McIntyre, Councilors Cook and Perry, Secretary-Elect Ekelund and Secretary Corbus. Absent, Doctors Luce and Boys.

The Secretary reported that the dues had come in most satisfactorily. A special letter which was sent out to all delinquent members on May 15 brought forth many responses from members who had been careless in paying their County Secretary. The membership now on record exceeds that of a year ago. The lists are at this time incomplete, but we estimate a gain in membership as of June 1, over that of 1934, of about 300 members.

The Secretary briefly reported on the proposed scientific program for the Annual Meeting.

The Secretary read a letter from a committee of the A. M. A. which set forth the importance of presenting the problems and purposes of organized medicine to senior undergraduates that they may have a better understanding of the medical practitioner's viewpoint, especially on the question of insurance and other matters involving medical economics. It was suggested that arrangements might be made for a competent speaker or speakers to appear before the senior classes to discuss such pertinent problems as might be indicated and the opportunity taken to stress the advantages which organized medicine and the Michigan State Medical Society offer to the young doctor. On motion by Carstens, seconded by McIntyre, it was voted that a committee, consisting of the President, the President-Elect and the Secretary be appointed and directed to discuss with the Deans of the University of Michigan Medical School and the Wayne University Medical School the advisability of such a program and, if agreeable to the school authorities, the committee be empowered to provide speakers to appear before the senior classes. The committee was also directed to draft a letter to be addressed to the graduating students, inviting them to membership in the Michigan State Medical Society, when properly qualified, and pointing out to them the advantages of such membership.

Believing it to be of real advantage to the Society that the Secretary be given the opportunity of keeping in close contact with the national organization's affairs, Carstens moved, seconded by McIntyre, that Michigan follow the lead of many other state societies and require the Secretary to attend the A. M. A. Annual Meeting, the sum of $150.00 to be appropriated for this expense; this amount to be equally divided between the Secretary and the Secretary-Elect in partial payment of their expenses. The motion was carried.

The Secretary read the financial report of the Legislative Committee, stating that the $2,000 appropriated for expenses had been overdrawn by $185.09 and asking for authorization to pay the bills to this amount that were now before him. A letter from Doctor Christian was read commending the work of the Legislative Committee. Doctor Perry reported for the Legislative Committee and asked for an additional appropriation. Following a discussion and on motion of Doctors Heavenrich-McIntyre an additional sum of $1,000 was appropriated for the use of the Legislative Committee between now and the January meeting of the Council.

Annual Meeting

The special purpose of this meeting of the Executive Committee was for the consideration of the report of the Secretary and Secretary-Elect on their recent visit to Sault Ste. Marie. The Secretary had sent out the report of his visit to each Councilor. He reported in this letter that the facilities for general meetings were excellent but that he felt much concerned about the inadequacy of hotel accommodations. Ninety rooms with double beds and twelve rooms with twin beds were all that the Hotel Manager could promise. The Secretary noted in his letter that at Mackinac Island in 1927 there had been an attendance of 389 and if this number or more came this year the facilities were definitely inadequate. He reported that there were hotel accommodations at the Canadian Soo, not yet checked, but probably in excess of 100, and that he had been assured that the residents of the Soo would freely open up their homes to the doctors.

The Secretary also reported that the Grand Hotel at Mackinac Island would offer the exclusive use of their hotel for the week of September 8 with the rates from $6.00 to $8.00 a day, American Plan, together with certain other inducements such as an orchestra, exhibition booths, etc., free. Doctor Perry opposed a change from the Soo and assured the Committee that the people of the town could be depended upon to make up for the deficiency of hotel accommodations through their hospitality and that Mackinac Island was not considered a part of the Upper Peninsula and that he did not believe the physicians of that district would be willing to accept the substitution.

It was moved by Heavenrich and seconded by McIntyre that the Secretary telegraph every County Secretary in the Upper Peninsula to determine whether Mackinac Island would be an acceptable substitution for the Soo, the desire was to give first thought to the men in the Upper Peninsula. When the vote was completed, the result was then to be submitted to each individual Councilor for a mail vote. Motion carried.

The meeting adjourned at 11:00 P. M.

BURTON R. CORBUS, *Secretary.*

NOTE: Pursuant to instructions, the Secretary communicated with each Upper Peninsula Secretary and the vote was five to five, some of the Societies being enthusiastically in favor of Mackinac Island, others being equally in favor of the Soo with a few who preferred the Soo but would be satisfied with the change. This vote was communicated to the Councilors and the return vote as to the place of meeting was nine to nine, the Chairman's vote included, so the meeting place remains at the Soo.

The well known hospitality of the Soo is expected to make up for the deficiency in hotel accommodations. It is evident from letters received that many men in the Lower Peninsula prefer the Soo and felt that, under the circumstances, it would be unwise to change. There is an excellent hotel in the Canadian Soo and it must be said here that doctors attending the meeting need have no fear that they will not be comfortably though perhaps not conveniently housed.

COUNTY SOCIETIES

BARRY COUNTY

The regular meeting of the Barry County Medical Society was held Thursday, April 25, in Hastings. The speaker, Dr. Paul S. Barker, Cardiologist from the University of Michigan Hospital, was obtained through the coöperation of the W. K. Kellogg Foundation.

Dr. Barker brought with him the electric stethoscope used by the University of Michigan Hospital for medical students. Through this instrument all of the physicians present were able to listen to the patient's heart at the same time. The instrument may be tuned to eliminate heart sounds of various pitches, making it possible for certain murmurs to be tuned out and others listened to. This enables the practising physician to learn the pitch of various types of heart murmurs, as well as their position in the cardiac cycle.

The afternoon clinic was followed by the regular dinner meeting at which Dr. Barker talked on "Heart Disease in Children." Dr. Barker was much interested in the effect of moving children with rheumatic heart disease into a more tropical climate. He stated that there was definite improvement in children under such a régime.

This meeting was well attended and enjoyed by everyone.

H. A. ADROUNIE, M.D., *Secretary.*

HOUGHTON COUNTY

The regular monthly meeting of the Houghton County Medical Society was held at the Miscowaubik Club, Calumet, Tuesday, May 7, 1935, at 8:30 P. M. The scientific program was preceded by a dinner at 6:30 P. M.

Program

Report of a Case of Actinomycosis—Dr. W. T. S. Gregg.

Report of a Case of Arterio-Venous Fistula—Dr. J. R. W. Kirton.

Motion Picture—Modern Methods of Anesthesia. Courtesy of Winthrop Chemical Company. Discussion led by Dr. T. P. Wickliff.

W. T. S. GREGG, *Secretary.*

SHIAWASSEE COUNTY

Shiawassee County Medical Society was entertained at the January meeting by a movie shown by Dr. A. L. Arnold, Jr., the subject of which was "The Newer Methods of Anesthesia."

The February meeting was addressed by Dr. Dale Kirk, of Flint, on "Some Practical Points in Obstetrics."

The March meeting was "Ladies' Night" with a six o'clock dinner served at Christian's restaurant, which was a great success socially. The event was sponsored by Dr. and Mrs. F. A. Watts.

The April meeting was addressed by one of the society's members, Dr. LaMotte Bates, of Durand, whose subject was "Meningitis." Dr. Bates exhibited a patient whom he had been treating for two years or more, by periodical withdrawals of spinal fluid.

The May meeting was addressed by Drs. L. E. Verity and R. L. Mustard, both of Battle Creek, on "Peptic Ulcer," covering the modern medical and surgical treatment, respectively. All meetings have been well attended.

W. E. WARD, *Secretary-Treasurer.*

SAINT CLAIR COUNTY

A regular meeting of Saint Clair County Medical Society was held at the Hotel Harrington, Port Huron, Mich., Tuesday, May 7, 1935.

Supper was served to nineteen members and four guests. At the time the meeting was called to order by President Waters, twenty-eight members and four guests were present.

The minutes of the preceding meeting were read and approved. Communications were read and placed on file. A committee on legislative activity, consisting of Doctors Heavenrich and Cooper, reported a visit to Lansing and stated they were satisfied that Representative Tomlin, from this district, would work for the best interests of the profession. The president then introduced Dr. John Dorsey of the psychopathic hospital at Ann Arbor who addressed the Society upon "Mental Disease." The speaker defined mental disease other than that due to intoxication and organic disease of the brain as a "disorder of the person." He spoke of life as "a conflict" and described reactions resulting therefrom in certain clinical cases. Doctor Dorsey stated that psychiatrists had to deal with only six or seven basic conditions, *i.e.*, schinzophrenia, manic-depressive states, the psychoneuroses, psychopathic personality, mental deficiency, mental disease due to infection, intoxication, syphilis, et cetera, and according to some authorities paranoid states. The speaker defined and described the elementary factors entering into mental disease and by examples taken from clinical experience made them understandable.

The meeting was one of the most profitable of the year.

A regular meeting of Saint Clair County Medical Society was held at the Harrington Hotel, Port Huron, Michigan, on Tuesday, May 21, 1935.

Twenty members and four guests were present. Reading of minutes of the preceding meeting was omitted. President Waters announced that Judge Black of the Probate Court was ready to meet the Emergency Relief Committee of the Society for a conference and stated that Doctors Thomas and LeGalley of the Staff of Port Huron Hospital were to be included in the conference. He instructed Dr. Patterson to arrange a date for the meeting. President Waters also announced that the Hospital Board and Building Committee wished to have a joint meeting with the Society and that he had

set Tuesday, May 28, as the time of the meeting, to be held at the Harrington Hotel with supper at 6:30 P. M. The Secretary was instructed to send out notices to this effect. A motion was adopted to the effect that the expenses of this special meeting be defrayed as other meetings of the Society so far as supper costs were concerned.

Dr. George Currie of Flint reported a series of six cases of musculospiral palsy in his own practice with favorable results. A series of lantern slides was used by the speaker. The conclusions reached as a result of this series of cases indicate that early surgical interference, after the first sign of wrist and finger drop appear, is best. Dr. William Clift of Flint spoke on, "Common Pathological Changes in the Spine with Especial Reference to the Mechanical Forces Involved." The conclusions drawn indicate the necessity for rest of the spine by use of the posterior shell in cases of injury or disease if deformity is to be prevented.

GEORGE M. KESL, *Secretary-Treasurer.*

TUSCOLA COUNTY

The regular meeting of the Tuscola County Medical Society was held at the Hotel Montague, Caro, Michigan, April 11, 1935. Dinner was served at 6:30 P. M.

The meeting was called to order at 8:30 P. M. by Dr. A. S. Rundell, who called upon Dr. E. C. Swanson to introduce the speakers of the evening. Dr. Powers of Saginaw was the first speaker and, as district councillor, discussed various phases of medical economics.

The second speaker was Dr. Slemons of the State Department of Health, who discussed in detail the entire list of biologicals furnished by the State.

Report of Censorship committee, Drs. Johnson and Race, on Dr. Harry F. Vail of Unionville, for membership subject to the usual probation period, was voted upon. Dr. Vail was elected to membership.

Motion by Dr. Swanson to authorize the Public Health Committee to publish posters was seconded by Dr. Barbour. Carried. A resolution was passed that the Tuscola County Medical Society express its deepest regrets at the passing of a former member, Dr. F. P. Bender at Detroit, Michigan.

LLOYD L. SAVAGE, *Secretary.*

WAYNE COUNTY

Membership in the Wayne County Medical Society has reached an all-time high. The figures are as follows:

Active	1524
(forty-six in process of acceptance)	
Honor	25
Associate	77
Non-resident	27

"Open House" was held in the Club Rooms of the Wayne County Medical Society, May 9, 1935, for members of the Woman's Auxiliary of the Society and the Women's Mobilization of the Community Fund. Tea was served and a tour of inspection coupled with instruction was made in which the various activities carried on in the Society's headquarters in behalf of Detroit's needy sick, such as the Medical Service Bureau, the Medical-Dental Bureau of the FERA and the Medical-Dental Aid of the Wayne County Medical Society and Detroit District Dental Society were explained. Talks were given on the general medical-sociologic problems of the day.

The Wayne County Medical Society will be host to the American College of Physicians, which will hold its 1936 meeting in Detroit.

Mother's Day was celebrated by the Maternal Welfare Committee of the Society in a special series of radio broadcasts and public talks to continue the permanent campaign inaugurated in 1934 to interest the public in maternal welfare. The program was under the direction of Dr. H. P. Cushman, Chairman of the Maternal Welfare Committee.

The Noon Day Study Club, energetic group composed of younger members of the Wayne County Medical Society, put the finishing touches on its scientific year with an annual banquet and meeting held May 22 in the club rooms of the Society. The following officers, elected at the general meeting of May 7, were inducted into office: President, Dr. C. E. Umphrey; president-elect, Dr. John Hookey; secretary, Dr. Leo Rennell; treasurer, Dr. Charles M. Burgess; chairman of the Medical Section, Dr. Ben Johnstone; secretary of the Medical Section, Dr. W. B. Cooksey; chairman of the Surgical Section, Dr. F. X. Krynicki; secretary of the Surgical Section, Dr. V. E. Nelson.

Delegates and Alternates to the 1935 State Society meeting are as follows:

Delegates	Alternates
Wm. J. Cassidy	Chas. S. Kennedy
Jos. H. Andries	Fred B. Burke
J. M. Robb	Stanley W. Insley
T. K. Gruber	Wm. S. Reveno
H. Wellington Yates	C. E. Dutchess
H. W. Plaggemeyer	C. K. Hasley
R. C. Jamieson	E. C. Baumgarten
L. J. Hirschman	B. U. Estabrook
Ralph H. Pino	A. H. Whittaker
Frank A. Kelly	Martin H. Hoffmann
L. T. Henderson	Basil L. Connelly
Wm. J. Stapleton, Jr.	L. O. Geib
Richard M. McKean	R. V. Walker
A. E. Catherwood	C. R. Davis
Alexander W. Blain	Allan McDonald
Hugo A. Freund	H. L. Morris
W. R. Clinton	H. W. Pierce
W. D. Barrett	Frank Kilroy
E. D. Spalding	A. J. Himmelhoch
C. F. Brunk	W. R. McClure
A. F. Jennings	Frank A. Weiser
H. F. Dibble	Frank Purcell
C. E. Umphrey	Wm. H. Honor
Louis J. Gariepy	V. L. VanDuzen
David I. Sugar	Wm. P. Woodworth
A. P. Biddle	Daniel P. Foster
John L. Chester	H. W. Hewitt

WOMAN'S AUXILIARY

MRS. F. T. ANDREWS, President, Kalamazoo.
MRS. F. M. DOYLE, Secretary, Kalamazoo.

Kalamazoo County

On April 16, members of the Woman's Auxiliary to the Kalamazoo Academy of Medicine enjoyed a coöperative dinner at the home of Mrs. C. B. Fulkerson, Kalamazoo. Covers were laid for twenty-eight. Mrs. F. T. Andrews, State Auxiliary President, informally presented several bills now pending before the legislature, followed by a round-table discussion. Mrs. J. G. Malone was the assisting hostess.

Mrs. R. G. Hubbell, president, appointed the following Committee on Resolutions, with power to act, on the death of our beloved Honorary President and state organizer, Dr. Caroline B. Crane: Mrs. Clarke B. Fulkerson, chairman; Mrs. Leo J. Crum and Mrs. John MacGregor. Resolutions follow:

We, the Woman's Auxiliary to the Kalamazoo Academy of Medicine, submit to the All-wise Providence of the final

summons of our valued Honorary President and State Organizer, Dr. Caroline Bartlett Crane, and

WHEREAS, we have suffered the irreparable loss of her wise counsel and guidance and bearer to us items of a National and World Outlook, be it

RESOLVED, that we endeavor to emulate her sterling qualities of counselor and friend to all worthy causes, especially for the uplift of the unfortunate, and that we may carry forward such of her noble interests, and,

FURTHER BE IT RESOLVED, that this word of sympathy be extended to Dr. A. W. Crane and family, and a copy be sent to the State Medical Journal and one be spread upon the records of our Auxiliary.

Signed: CORA K. FULKERSON, Chairman
ELMA W. MACGREGOR
MARY F. CRUM

On April 4 the Auxiliary sponsored a benefit bridge, seventy-eight tables playing, for the benefit of the Hard of Hearing School. During the afternoon the Child Conservation Circle held a food sale, proceeds to be used for radio ears.

Kent County

The Kent County Auxiliary honored the state officers at a spring musicale and tea given at the home of Mrs. Carl F. Snapp, Wednesday afternoon, April 17. The state officers present were Mrs. F. T. Andrews, president; Mrs. F. M. Doyle, secretary-treasurer; Mrs. Guy L. Kiefer, state organizer, and Mrs. J. E. McIntyre, state historian. Preceding the musicale, Mrs. A. V. Wenger, retiring president of the Kent County Auxiliary, was hostess at a luncheon given at the Woman's City Club.

The annual luncheon was held on May 8 in the Women's City Club, Grand Rapids.

Brief talks were given by Dr. Richard R. Smith, president of the state medical society, Dr. J. B. Whinery, president of Kent County Medical Society, and Dr. J. G. Rigterink, president-elect.

Annual reports were read by the committee chairmen. A farewell address was delivered by Mrs. A. V. Wenger, retiring president of the society, after which Mrs. Henry J. Pyle, president-elect, was installed as president for 1935-36.

MRS. WM. R. TORGERSON.

Oakland County

The Oakland County Auxiliary has been busy all winter making articles for hospitals. Each month the group met for a pot-luck luncheon at the home of one of its members. The afternoons were spent working for hospitals.

Plans are now under way for a steak-roast, which will be held some time in May, at which the Medical Society will be guests of the Auxiliary.

Wayne County

The Woman's Auxiliary to the Wayne County Medical Society held its Neighborhood Bridge Tournament on Tuesday, April 30, at the Botsford Tavern. Through the courtesy of the Ford Motor Company, cars were provided. During the year, groups have been meeting in the various homes of the members to play bridge. The purpose of these meetings has been twofold: to enable the membership to become better acquainted, and to enhance the treasury. Botsford Tavern is an authentic stagestop tavern filled with real antiques, taken from Greenfield Village, and graced with the charm of its hospitable period. Mrs. Shaw, the hostess, is noted for the originality of her teas. That on April 30 was a Colonial Tea. Music was furnished by the Ford Dixie Eight.

The Board of Directors and members of the Ways and Means Committee acted as hostesses for the afternoon.

On Thursday, May 9, from three to five, the Wayne County Medical Society and Women's Auxiliary held open house at the Society's headquarters, Woodward at Canfield, for the members of the Women's Mobilization for Human Need of the Detroit Community Fund.

Mrs. Frank W. Hartman, president of the Auxiliary, brought greetings from her society, and Dr. William Cassidy, president of the Wayne County Medical Society, represented that organization. He introduced Dr. Frederick B. Burke, who lectured on the activities of the Wayne County Medical Society.

(MRS. FRED'K) FLOY T. MUNSON,
Chairman, Press Committee.

Jackson County

John Masefield's poem, "Everlasting Mercy," was reviewed by Rev. Carl S. Winters at the April meeting of the Jackson County Medical Auxiliary at the home of Mrs. M. N. Stewart, Jackson. Assisting hostesses were Mesdames W. B. Anderson, C. D. Munro, Guy Culver, E. O. Leahy, W. E. McGarvey and E. F. Lewis.

Dinner, served to thirty-five, was followed by a business session conducted by Mrs. Glen C. Hicks, president. A nominating committee was named consisting of Mesdames Clyde Leonard, H. A. Brown and E. D. Crowley.

Tribute was paid to the late Dr. Caroline Bartlett Crane, organizer of the auxiliary in 1927. Plans for the annual spring luncheon in May were discussed.

Saginaw County

The annual meeting of the Saginaw County Auxiliary was held Tuesday evening, April 16, at the home of Mrs. Henry J. Meyer, with Mrs. J. A. McLandress presiding. The annual reports were followed by the election of officers at which time the following were elected: President, Mrs. Milton J. Butler; vice president, Mrs. Lloyd C. Harvie; secretary, Mrs. W. J. O'Reilly; treasurer, Mrs. M. D. Ryan. Bridge was enjoyed later in the evening and refreshments were served by Mrs. Robert Jaenichen and her committee.

MICHIGAN'S DEPARTMENT OF HEALTH

C. C. SLEMONS, M.D., Dr.P.H., Commissioner
LANSING, MICHIGAN

The Principal Causes of Death in Michigan in 1934

Study of the principal causes of death in Michigan in 1934 by five year age groups reveals many significant facts.

Deaths under one year totalled 4,377, exceeded only by the deaths in the 65-69, 70-74, and 75-79 age groups. Among infant deaths, premature birth was responsible for the largest number, 1,418, followed by pneumonia (601 deaths), congenital malformations, diarrhea and enteritis, injury at birth, other diseases of early infancy, congenital debility and disease of the thymus. The high ranking of pneumonia, and the fact that 100 children died from disease of the thymus are worthy of special note.

Deaths of children from one to four totalled 1,138, a little more than one-fourth of those occurring among children under one year. Pneumonia led as a cause of death, with accidents a close second. Diarrhea and enteritis came third.

Still fewer deaths (699) occurred in the 5-9 age group. Accidents took first place in this group, with appendicitis second and pneumonia third.

The age group 10-14 had the smallest number of deaths of any of the classifications. There were only 580 deaths in this group, 143 due to accidents, 66 to appendicitis and 371 to all other causes combined.

Deaths increased to 875 in the next age group, 15-19 years. Again accidents headed the list, being responsible for 248 deaths. Tuberculosis appeared for the first time in this age group, causing 137 fatalities. Appendicitis continued as a major cause, (77 deaths) and pneumonia came next (52 deaths).

Accidents exactly matched tuberculosis for first place in the age group 20-24, each causing 252 deaths of the total of 1,169 in this grouping. Puerperal causes appeared for the first time, followed by pneumonia and appendicitis. Heart disease also made its first appearance as a principal cause of death, coming after appendicitis.

In the age group 25-29 tuberculosis took first place, with 273 deaths. Accidents dropped to second place, and pneumonia was third, with puerperal causes fourth and heart disease fifth. Suicide for the first time became a principal cause of death in this age group. The total number of deaths in this classification was 1,311.

Tuberculosis still led in the age group 30-34, causing 235 out of the total of 1,533 deaths. Accidents followed closely, then pneumonia, cancer (for the first time), heart disease, puerperal causes, appendicitis and suicides.

Accidents came back to first place in the age group 35-39, being responsible for 241 of the 1,894 deaths. Tuberculosis, pneumonia, heart disease, cancer, puerperal causes, nephritis, suicides and appendicitis followed in the order named.

For the only time, cancer led as a cause of death in the 40-44 age group. Heart disease was a close second, followed by accidents, tuberculosis, pneumonia, nephritis, suicides, apoplexy, appendicitis and syphilis. Deaths in this classification totalled 2,370.

Heart disease took first place as a cause of death in the 45-49 age group, a lead which it maintained through all the remaining groups. Cancer took second place, a position which it also held until it yielded to apoplexy in the age group 75-79. Beginning with age group 50-54, apoplexy ranked third as a cause of death, until the 75-79 group, when it rose to second place. It dropped to third in age group 90 and over, being replaced by senility.

In the groupings beyond 45-49, pneumonia, tuberculosis, nephritis, accidents, diseases of the coronary arteries, suicides, diabetes, appendicitis, angina, arteriosclerosis and senility appeared in varying rank. The persistence of accidents as a major cause of death at all ages compels attention.

The largest number of deaths, 5,229, occurred in the age group 70-74, the next highest, 4,948, in the group 75-79, and the third highest, 4,610, in the group 65-69. The total of deaths in all ages and from all causes in 1934 was 50,440, equivalent to a death rate of 9.90.

Communicable Disease Incidence

Since the first of the year the scarlet fever incidence has been running considerably below last year's record and also below the five year mean. In fact, as time progresses the incidence is dropping farther and farther below the record of last year for the same period. For the month of April there were 1,463 cases reported as compared to 3,355 for April, 1934.

Diphtheria has likewise been quite low, there being a total of 17.9 cases for the first four months. The total number of cases for the corresponding period a year ago was 236.

Typhoid fever has been slightly below the 1934 record, there being 36 cases for the first four months as compared to 53 of last year.

The whooping cough incidence has been slightly above that of last year. Pneumonia continues quite high.

Smallpox has been almost non-existent, there being only three cases reported for the first four months.

The disease which has been far in advance of all others is measles. The total number of cases reported for the first four months of this year has exceeded the 42,129 cases reported for the year 1932, that number being the largest on record heretofore.

Diphtheria Studies

For more than a decade, diphtheria immunization campaigns have been carried on in the state. During this time diphtheria has been decreasing at a very rapid rate until it has reached the point where it may almost be classed as a rare disease. Because of two factors, decrease in disease and increase in immunization, question has arisen as to just what percentage of children under ten years of age may actually be imune to the disease as measured by the Schick test, and, do we have more or less diphtheria carriers at present?

An attempt is being made to answer these questions by a Schick testing campaign and collection of nose and throat swabs for diphtheria cultures in two counties, Grand Traverse and Ionia. This work is being done by a physician from the Michigan Department of Health and the field work will be completed before the end of the school year. It will be some time after that before all data are analyzed.

GENERAL NEWS AND ANNOUNCEMENTS

Dr. Frank Pierce of Detroit has returned from San Antonio, Texas, where he was a delegate to the National Kiwanis meeting.

* * *

The sympathy of their many friends in the profession is extended to Drs. John L. Chester and S. W. Southwick of Detroit, whose wives died in May.

* * *

The new officers of the Detroit Academy of Surgery elected at the annual meeting May the ninth are Dr. Joseph H. Andries, president; Dr. Louis J. Morand, vice president; and Dr. Roger V. Walker, secretary-treasurer.

* * *

Dr. David I. Sugar has resigned as editor of the *Detroit Medical News* after filling the position with ability for two years. He is succeeded by Dr. Harold Mack as editor and Dr. Clyde Hasley as assistant editor.

* * *

Dr. Samuel F. Marshall who has for ten years been a member of the Staff of the Henry Ford Hospital and hince April, 1930, has been resident surgeon, has resigned. He has gone to Boston to be associated with Dr. Frank Lahey in the Lahey Clinic.

A Crippled Children's Clinic and Hospital is to be constructed at Traverse City. The cost of $75,000 will be defrayed by the Michigan Children's fund. The measure, sponsored by Senator Felix H. H. Flynn, Cadillac Republican, will allow the clinic to obtain power, heat, light and a site from the Michigan State Hospital at Traverse City.

* * *

According to the sixth annual report of the Children's Fund of Michigan published May first an additional gift to the fund was made amounting to $2,156,675. Dr. Hugo A. Freund of Detroit is president of the fund. In spite of disbursements during the past several years, the fund at present is $10,601,586, which is more than the original gift.

* * *

Mr. William Burns was married on May the first to Miss Josephine Murphy, both of Detroit. Mr. Burns has occupied the position of executive secretary of the Wayne County Medical Society for the past five years. The bride and groom left immediately for their honeymoon trip, going by airplane to New York and by steamer to San Francisco via the Panama Canal.

* * *

Dr. Chalmers J. Lyons, professor of oral surgery in the Dental Department of the University of Michigan died on May the eighteenth at the age of sixty-one years. He had been a member of the oral surgery staff since 1906. After graduating from the University of Michigan in 1898 he practised dentistry in Adrian, later coming to Ann Arbor as teacher in the Dental School.

* * *

The spring meeting of the Michigan Association of Roentgenologists was held at the University Hospital, Ann Arbor, Saturday, May fourth. The program was as follows: "Intervertebral Tuberculosis," Dr. Carl Badgley, Department of Bone and Joint Surgery; "The Surgical Treatment of Bronchogenic Carcinoma of the Lung," Dr. John Alexander, Department of Thoracic Surgery.

* * *

The Detroit Roentgen Ray Society held its annual meeting at Toledo, where the society was the guest of St. Vincents Hospital and Dr. John B. Murphy, roentgenologist. The annual election of officers resulted as follows: Dr. E. G. Minor, president; Dr. Carlton Pierce of Ann Arbor, vice president; and Dr. E. R. Witwer, secretary-treasurer. The program consisted of a presentation of interesting films by Dr. Murphy's staff.

* * *

The regular monthly meeting of the Southwestern Michigan Triological Society was held in Kalamazoo, on May 23. After dinner at the Columbia Hotel, Dr. M. E. House presented a paper on "The Management of Sinus Cases in Relation to General Practice and the Public." Dr. Leo Mayer of Chicago read a paper entitled "Meanderings in Ophthalmology," which was followed by a general discussion. About thirty members attended this meeting.

* * *

Dr. Charles H. Ainsworth of Saint Clair, Michigan, died May 13, 1935.

Doctor Ainsworth was born at Algonac, Michigan, in 1902, was educated in the public schools of Saint Clair County and graduated with the degree of Doctor of Medicine at the University of Michigan in 1925. Since completion of his professional education Doctor Ainsworth has resided at Saint Clair, Michigan, making his home with his parents, who surve him, and has been engaged in the practice of medicine in that county.

The annual election of the Wayne County Medical Society held May the twentieth resulted as follows: President, Dr. Robert Jamison; president-elect, Dr. Thomas Gruber; secretary, Dr. Martin Hoffman; trustee, Dr. Joseph Andries. The retiring president, Dr. William Cassidy, reported 1,510 members in the society. Dr. A. T. McCormack, State Commissioner of Health in Kentucky and Secretary of the Kentucky State Medical Association, was the guest speaker at the Wayne County Medical Society. Dr. McCormack emphasized the importance of leadership on the part of the medical profession. The profession recognizing a changing economical and industrial world must lead in adopting medical care to the changes that have taken place in the matter of social adjustment.

* * *

At the annual commencement of Wayne University, Dr. William Donald of Detroit was awarded the honorary degree of Doctor of Science in Education. The degree is well merited. Doctor Donald has long been a member of the faculty of the Detroit College of Medicine and Surgery, now the medical department of Wayne University. A graduate of McGill University during the early years of Osler's connection with the institution he has been a life long student of medicine. Doctor Donald is of a genial personality. He is a friend to every one whose good fortune it is to know him. This journal extends congratulations.

* * *

He Performed the First Appendectomy

Dr. Abraham Groves, a Canadian surgeon residing at Fergus, Ontario, died on May thirteenth at the age of eighty-seven years. Dr. Groves had practiced medicine and surgery for sixty-five years. He is said to have performed the first operation for the removal of appendix. His career was the picturesque and interesting one of a country doctor. Even before antiseptic and aseptic surgery had become well recognized, Dr. Groves took the precaution to boil all instruments that were to be used in his operations, as well as to scrub his hands and arms in much the same manner as the modern surgeon.

* * *

American Medical Association
Membership and Fellowship Defined

Every member in good standing in any constituent state medical association whose name is officially reported to the secretary of the American Medical Association as eligible for enrolment is a *member* of the American Medical Association. No *member* of the American Medical Association is called on, as such, to pay any dues or to contribute financially to the Association.

Members of the American Medical Association who graduated from recognized medical schools are eligible to apply for Fellowship.

To qualify as a Fellow, a member in good standing is required to make formal application for that relation and to subscribe for the *Journal*. Applications must be approved by the Judicial Council. Fellowship dues and subscription to the *Journal* are both included in the one annual payment of $7.00, which is the cost of the *Journal* to subscribers who are not Fellows.

None but Fellows are eligible for election as officers; none but Fellows can serve as member of the House of Delegates; none but Fellows can register at the annual sessions of the Association or participate in the work of its scientific sections.

Members of state medical associations pay dues to those bodies but they pay nothing to the American Medical Association. *Fellows* pay dues and subscription to the *Journal* in the sum of $7.00 a year, which has nothing to do with county or state dues.

Urological Association Meeting

The Detroit Branch of the American Urological Association met at the Hotel Olds in Lansing, Michigan, on Saturday, May 25, 1935. The chair was occupied by the president, Dr. Wm. E. Keane. There was an afternoon program consisting of several papers presented by members of the Association. The afternoon program was followed by a dinner and an evening program.

Two guest speakers presented the evening program. Dr. Robert Dieterle of the University Hospital, Ann Arbor, spoke on "Psychological Medicine in Relation to Genito-Urology" and Dr. Ernest Rupel, Indianapolis, spoke on Urological Diagnosis: "The Problem of the Difficult Case."

Election of officers for the coming year took place, results of which are as follows: President, Dr. Robert S. Breakey, Lansing; vice president, Dr. Alvin Thompson, Flint; secretary-treasurer, Dr. George C. Leckie, Detroit. The Executive Committee includes Dr. Harold L. Morris, Detroit, and Dr. George C. Burr, Detroit.

* * *

American College of Physicians

At the recent meeting at Philadelphia (April 29 to May 3) of the American College of Physicians, the following from Detroit were admitted to Fellowship: Drs. J. Kenner Bell, Clarence D. Moll, and Neil J. Whalen. The following Detroit physicians were admitted as Associate Members: Drs. O. A. Brines, Richard Connelly, Langdon Crane, Thomas Horan, Harold Kullman, Frank S. Perkin, Alvin E. Price, Ivor Reed, Robert Schneck, Lowell Selling, and Hugh Stalker.

Those registered from Michigan at the annual meeting of the College of Physicians were as follows: *Ann Arbor,* Dr. James D. Bruce; *Battle Creek,* Dr. Elmer L. Eggleston; *Birmingham,* Dr. Harold Riche Roehm; *Detroit,* Drs. Samuel S. Altshuler, J. Lee Barrett, J. Kenner Bell, David Clark, Richard C. Connelly, Warren Cooksey, Thomas M. Horan, Charles G. Jennings, Clarence D. Moll, W. L. Lowrie, Jr., Frank R. Henagh, Harold A. Robinson, Elwood A. Sharp, Albert M. Wehenkel R. F. Weyher and William J. Stapleton, Jr.; *Fenton,* Dr. B. G. McGarry; *Flint,* Drs. Franklin W. Baske, Myrton S. Chambers and Frederick B. Miner; *Grand Rapids,* Drs. Wm. Northrup, Sumner M. Wells, Jr., and Joseph B. Whinery; *Jackson,* Dr. Arthur M. Shaeffer; *Kalamazoo,* Drs. John. B. Jackson, Benjamin A. Shepard and Leo E. Westcott; *Lansing,* Drs. Theodore I. Bauer, J. E. McGillicuddy, Milton Shaw and George C. Stucky; *Muskegon,* Drs. F. Herbert Bartlett and Roy H. Holmes; *Petoskey,* Dr. Buell H. VanLeuven; *Pontiac,* Dr. George A. Sherman; *Saginaw,* Dr. Stuart Yntema.

* * *

The American Association of the History of Medicine

The eleventh annual meeting of the American Association of the History of Medicine was held in Atlantic City, N. J., May 6, 1935. The program was dedicated to the memory of Dr. Joseph P. O'Dwyer, one of the world's greatest medical benefactors to sick children, who fifty years ago demonstrated to a skeptical medical profession improved laryngeal intubation and published his first article on this new and life saving treatment of the severe forms of laryngeal diphtheria.

Through the courtesy of Professor J. W. Crane of the University of Western Ontario at London and Professor Jabez H. Elliott of Toronto, Ontario, there was exhibited both "The Doctor's Bag" in which Doctor O'Dwyer transported his set of frequently used intubation tubes and a complete assortment of the models of all his instruments by means of which he saved, and taught other physicians to save, the lives of hundreds of children sick of laryngeal diphtheria, many of whom would, without the use of the intubation tube, have died a wretched death of strangulation. It was eminently fitting that the address concerning Doctor O'Dwyer and his work should have been made by Professor Chevalier Jackson, who, following O'Dwyer, has originated and popularized another life-saving and health-promoting method of direct vision diagnosis and efficient treatment, namely—bronchoscopy and esophagoscopy.

Officers elected for 1935-1936 are: Dr. W. S. Middleton, Madison, Wisconsin, president; Dr. W. C. Alvarez, Rochester, Minnesota, vice president; Dr. E. J. G. Beardsley, Philadelphia, secretary and treasurer; David Riesman, Gerald Webb, William S. Miller, Edward B. Krumbhaar, Oscar Klotz, Joseph L. Miller and Carl V. Weller, members of the Council.

* * *

A Tribute to Dr. Manwaring

The May number of the JOURNAL of the Michigan State Medical Society contained an obituary of the late Dr. J. G. R. Manwaring of Flint. In the May number of the *Bulletin* of the Genesee County Medical Society appeared the following splendid tribute to the memory of Dr. Manwaring:

"The Genesee County Medical Society, with profound sorrow and a heartfelt grief, takes cognizance of the death of our fellow practitioner Dr. Joshua George Ross Manwaring.

"In the passing of Doctor Manwaring medicine sustains a great loss. His conception of duty towards the patient, and the faithfulness, the eager energy and the masterful skill displayed in carrying out this fight for restoration to health, had the admiration of his intimate associates and was the radio beam guiding the younger practitioner to high ideals.

"His keen vision, his at times uncanny diagnostic acumen, his cheery smile and the masterful precision of his skillful and fascinatingly interesting hands, are things that we who knew him best can never forget.

"We were the beneficiaries of his ability as a teacher, of his scholarly attainment not only in medicine but in the broader field of economics, politics, and sociology. He at all times had something constructive and well worth while to offer in the solution of our medical problems and he was endowed with the happy gift of speech that rendered even dull statements entertaining.

"We of the medical profession are only a small group who will miss his dynamic personality, the public which he served so well will suffer the greater loss. He not only mastered the Profession but he acquired the Art which is not taught in school or laboratory. Whether it be a municipal problem, a matter of medical economics, or the dire illness of an individual, he did his best with an equal conscientiousness.

"This brief statement setting forth but a few of the many attributes of our beloved friend will be put in a permanent record, expressing the high esteem and admiration in which he was held by all of us."

* * *

The Wayne County Medical Society Symphony Orchestra

For the past five years numerous fruitless attempts to organize an orchestra in the Wayne County Medical Society were made by a small group of doctors who made music their hobby and avocation. But not until January, 1935, was this attempt crowned with success.

The "spark plugs" were found. An enthusiastic meeting was held, temporary officers elected, proper publicity organized, and within two weeks a full orchestra was formed. But they were still groping in the dark. An able permanent director was needed. One was eventually secured in the person of the enthuiastic and brilliant virtuoso cellist, Mr. Georges Miquelle. He gave his time and energy to the doctors whose friendship he cherishes. He slaved away in shirt sleeves into the wee hours of the night with them to bring out the fine appreciation of music and to iron out the technical flaws which he readily forgave, knowing that this was merely an avocation after strenuous days of energy-trying activity of their daily life. Never ruffled, never impatient, ever smiling and encouraging, he worked on tirelessly.

The orchestra is happy to have lived up to his expectations. He was so pleased with the first public performance that he is planning a series of radio broadcasts for next season when the concerts will be given at the Scottish Rite Cathedral of the Masonic Hall and the Art Institute. When the curtain fell after the debut of the orchestra, Mr. Miquelle in a curtain speech, said: "This was perfect, gentlemen. You are accomplished musicians. You are true artists, and I am with you as long as you want me."

As to the aims, they are simply a desire for cultural development, the true musician's thrill for ensemble playing, and the achievement of perfect relaxation from the stress and strain of daily work in the indulgence of a pleasant hobby. History is resplendent with the names of doctors—musicians: (1) Billroth, the great surgeon and pianist, a close friend of Brahms, a frequent performer with that great composer in four hand compositions; (2) Helmholtz, another great pianist; (3) Schweitzer, whose pipe-organ playing was equalled only by his skill as a physician; (4) Fritz Kreisler, the great violinist and composer, and many others.

Both Medicine and Surgery as well as music require fine craftsmanship and in the above mentioned men they blended with the very finest precision.

Rehearsals go on weekly. There is no let-up! Plans have been laid for an augmented orchestra for next year with the applications on file carefully considered and acted upon promptly. Permanent officers have been elected and active committees appointed; radio broadcasted concerts to be given several times during the year; programs to be more ambitious and of the unusual type, and to be given in auditoriums where the finest acoustics are available. The orchestra has behind it a well achieved successful performance after only two months' work. There is the thrill of constructive accomplishment. Ahead there is the vista of unexplored fields of musical activity, the treasured hours of work with a brilliant director, and the fine response of our Society members which is the ever-encouraging incentive for our chosen motto: "En Avant!"

The personnel of the orchestra is as follows: director, Mr. Georges Miquelle. *Violin:* Dr. Raphael Altman, Concert Master; Dr. Jack Agins, Dr. John Bryce, Dr. C. R. Davis, Dr. H. C. Galantowicz, Dr. Samuel Jacobson, Dr. Ezra Lipkin, Dr. D. Annessa Marcilli, Dr. Leon Ruttenberg and Dr. S. S. Skrzycki. *Viola:* Dr. Max Beitman. *Cello:* Dr. Eugene Osiusand, Dr. William P. Woodworth. *Piano:* Dr. Frank MacKenzie. *Saxophone:* Dr. E. W. Krass and Gerald Wilson, Jr. *Clarinet:* Dr. G. C. Burr and Dr. Roy Tupper. *Trumpet:* Drs. Arthur E. Hammond. Gerald A. Wilson, Paul Walker and Miss Phyllis Hyde. *Flute:* Dr. George H. Palmerlee. *Trombone:* Dr. Fred W. Hyde and Fred Hyde, Jr. *Percussionist,* Dr. Harold C. Kahn.

The personnel of the glee club is as follows: Director, Mr. Arthur H. J. Searle. *First Tenors:* Drs. L. E. Crick, Edwin J. Hammer, and R. W. Lignell. *Second Tenors:* Drs. Jack Agins, L. Goldonyi and Douglas Jackson. *Baritones:* Drs. John N. Solowich, Leo Rennell and Harry A. Pearse. *Basses:* Drs. Carleton Fox, Paul Brownell, F. T. McCormick and Frank MacKenzie. *Accompanist:* Dr. Frank MacKenzie.

The officers for 1935-1936 are: President, Dr. Frank MacKenzie; Vice President, Dr. William P. Woodworth; Secretary, Dr. Jack Agins; and Treasurer, Dr. Arthur Hammond.—*Contributed.*

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The Detroit Oto-Laryngological Society

The meeting of the Detroit Otolaryngological Society of April the twenty-fourth was of more than local as well as of usual interest. The event was the twenty-fifth anniversary of the founding of the society. While designated the "Detroit" society, it includes members from pretty much over the state of Michigan. The Silver Jubilee Banquet was held at the Recess Club in the Fisher Building, Detroit, when members and guests met to honor the founders of what is now the largest organization of its kind, having 106 active members, of which 26 are from outside of Detroit. Of the 20 men who formed the association in 1910, eleven, all those living, were present at the banquet.

Dr. Robert F. Ridpath, of Philadelphia, was the guest of honor and spoke on "Voice Production." He demonstrated with lantern slides and moving pictures.

Dr. Emil Amberg, Dr. Burt R. Shurly and Dr. Don M. Campbell were the other speakers of the evening.

Among the features of the evening was the musical program which was given by the orchestra composed of members of the Society. Dr. Frederick Munson sang several solos and led the group singing, including the song written by Dr. J. M. Sutherland which contained the names of all the founders.

There were over 90 present, including Dr. Austin Hayden, Treasurer of the American Medical Association and President of the Chicago Medical Society, Dr. Joseph Beck, Professor of Otology of the University of Illinois, and Dr. A. C. Furstenberg, Dean of the University of Michigan Medical School.

As intimated, the society was founded in 1910 by the following members (the asterisks indicate deceased founders): Drs. Earnest L. Shurly,* Emil Amberg, Robert Beattie, Don M. Campbell, Leartus Connor,* George E. Frothingham, Robert W. Gilman, Louis J. Goux,* Henry J. Hartz, Preston M. Hickey,* Peter J. Livingstone,* Richard E. Mercer, Stanley Miner, Walter R. Parker, Herman H. Sanderson, Burt R. Shurly, Eugene Smith, Sr.,* Wadsworth Warren, Sr.,* John V. White,* Harold Wilson.*

The membership at the present time consists of resident members as follows: Drs. Emil Amberg, Robert E. Anslow, C. S. Ballard, S. E. Barnett, Robert Beattie, Wm. J. Beery, Howell L. Begle, Neil I. Bentley, Edward J. Bernstein, John R. Birch, A. O. Brown, C. F. Brunk, Don M. Campbell, Duncan A. Campbell, Mac D. Campbell, J. M. Carter, T. Percy Clifford, Don A. Cohoe, James Croushore, W. A. Defnet, J. L. Dill, Arthur Erkfitz, William Fowler, George E. Frothingham, John E. Gleason, B. F. Glowacki, William S. Gonne, Raymond S. Goux, H. E. Grant, Lee E. Grant, Arthur E. Hammond, Voss Harrell, Ray W. Hughes, B. H. Jenne, Euclid V. Joinville, Thomas F. Keating, George C. Kreutz, R. Lee Laird, John W. Law-

son, Chas. B. Lundy, Harold U. Mair, Elbert A. Martin, Richard E. Mercer, Charles C. Merkel, Wm. O. Merrill, Stanley G. Miner, Willard Monfort, J. B. Morton, Frederick T. Munson, G. L. McClellan, Carl C. McClelland, H. W. MacFarlane, Walter R. Parker, Howard W. Pierce, Ralph H. Pino, John E. Pittman, Edgar E. Poos, Wilson Randolph, Wesley G. Reid, James Milton Robb, LeRoy W. Rubright, Frank L. Ryerson, Hermon H. Sanderson, Burt R. Shurly, H. Lee Simpson, W. S. Summers,. J. M. Sutherland, Wilbur J. Voorheis, Wadsworth Warren, Jr., Jacob S. Wendel, E. L. Whitney, A. P. Wilkinson, Wesley W. Willson, Wm. P. Woodworth.

Non-resident Members.—Drs. Fred A. Baker, Pontiac, Michigan; Wm. G. Bird, Flint; Fred J. Cady, Saginaw; Benton N. Colver, Glendale, California; Charles W. Ellis, Lansing; Robert C. Fraser, Port Huron; Robert H. Fraser, Battle Creek; C. B. Fulkerson, Kalamazoo; A. C. Furstenberg, Ann Arbor, E. G. Galbraith, Toledo, Ohio; Wilfred Haughey, Battle Creek; Don M. Howell, Alma; Wm. B. Hubbard, Flint; Bertil Larson, Pontiac; E. O. Leahy, Jackson; James H. Maxwell, Ann Arbor; Esli T. Morden, Adrian; Wm. E. McGarvey, Jackson; Oliver McGillicuddy, Lansing; H. M. Parker, Monroe; John Walter Orr, Flint; Arthur E. Owen, Lansing; Ferris N. Smith, Grand Rapids; R. S. Watson, Saginaw; Carl G. Wencke, Battle Creek; Herbert Westervelt, Benton Harbor; Edward P. Wilbur, Kalamazoo; George E. Winter, Jackson.

Honorary Members.—Henry J. Hartz, Detroit, Michigan; Robert Gilman, Detroit, Michigan; J. C. Huizinga, Holland, Michigan, and Charles H. Baker, Bay City, Michigan.

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Dr. Sibrand Lups' Monograph Concerning "Chronic Ulcerative Colitis"—An Appreciation Of Its Translation Into English by Dr. Abel J. Baker

Under the above title appears an editorial in the current issue of the *American Journal of Digestive Diseases and Nutrition.*

We quote briefly from the editorial in which the editor acknowledges his indebtedness to the translator, Dr. Abel J. Baker of Grand Rapids, Michigan.

"When Dr. Lups' monograph reached us, an immediate—and, for a time, puzzling—problem presented itself, namely, that of adequate translation by a trained, capable internist. Even on the faculties or staffs of our widely known schools, clinics or hospitals it was not possible to uncover the person whom we felt the task demanded: an internist of standing who also was scientifically solid and who, though an American, read (and could think in) 'Holland Dutch' as a language twin to his American.

"In this quandary, happily the editor recalled the capabilities of a former classmate, Dr. Baker. How thoroughly and faithfully Dr. Baker has performed his task, the printed article demonstrates far more eloquently than could any words of ours.

"Dr. Baker has given the American literature a contribution which not alone most eminently is worth while, but he has allowed physicians and scientists of these Western lands a glimpse of what investigative efforts are being carried on by such well grounded, careful students and clinicians as are connected with the institutions of Holland."

This new journal, the official publication of The American Gastro-Enterological Association, just now entering its second year, has already found a place for itself in the "special journal" field. In make-up and in contributions, the April Journal is unusual in its excellence. Your attention is especially called to the leading article, "Vaccine Therapy in Ulcerative Colitis," by Dr. Lups. The x-ray illustrations made from the original copper plates are as fine as anything that has ever been published. Your attention is also called, if the magazine is available to you, to a lengthy article in the editorial columns by Walter C. Alvarez of Rochester, Minnesota, under the title "Is The Public Being Stampeded In Regard To Vitamins?"

The congratulations of this JOURNAL are extended to Dr. Frank Smithies, editor of the *American Journal of Digestive Diseases and Nutrition,* for the development of a valuable and interesting journal in a field not heretofore adequately covered.

THE DOCTOR'S LIBRARY

Acknowledgment of all books received will be made in this column and this will be deemed by us a full compensation to those sending them. A selection will be made for review, as expedient.

A TEXTBOOK OF BIOCHEMISTRY: Edited by Benjamin Harrow, Ph.D., Associate Professor of Chemistry, The City College, College of the City of New York, and Carl P. Sherwin, M.D., Sc.D., Dr.P.H., LL.D., Member of the Staff of St. Vincent's Hospital and French Hospital, New York City. 797 pages with 52 illustrations. Philadelphia and London: W. B. Saunders Company, 1935. Cloth, $6.00 net.

The success of a work of composite authorship such as this depends on the organization and on the ability of the various authors. Such a book is bound to have sections which are treated less skillfully than others, and it cannot fail to lack the uniform viewpoint of a single author. As much as these factors are desired in a book, biochemistry has grown so rapidly that one man cannot encompass the field efficiently. An up to date biochemistry must be composite.

Among its thirty authors are outstanding authorities in biochemistry, such as Bloor, the Cori's, Eggleton, Luck and McCollum. English biochemists as well as American are included in the list of writers.

Unlike most texts, the usual chapters on colloidal and physical chemistry are omitted. These subjects, however, are well treated in the chapters on proteins and amino acids, where they especially apply. The first chapter on the living cell by Robert Chambers is followed by sections on food substances and cell constituents, nutrition, vitamins, enzymes and digestion. Chapters on the biochemistry of bacteria and immunology, on blood, respiration and pigment follow. A number of chapters deal with the biochemistry of tissue and with metabolism. Each chapter is accompanied by about fifty references.

For use as a textbook, the work is probably too compendious to be followed consistently in a course, but it is easily adapted for selected readings. As a reference, it is exceptional, all points being immediately available through a complete index. The work will undoubtedly prove a distinct addition to biochemical literature.

FOOD FOR THE DIABETIC, What to Eat and How to Calculate it with Common Household Measures. By Novy Pascoe Huddleson, Editor Journal American Diabetic Association. With an introduction by William S. McCann. Dewey, Professor of Medicine and Dentistry. Third Revised edition. New York. The Macmillan Company. Price $1.50. 1934.

This is essentially a book for the diabetic patient, giving him the information in regard to nutrition that he should have. It contains none of the technical knowledge that is properly the equipment of the physician. The matter of preparation of food is taken up in a clear and practical way. Physicians with intelligent diabetic patients will find it valuable in the management of diabetic cases.